

-300-

279-GluLeuIleGluGluValAlaGly-286

288-LysIleSerGlyGluGluAspArgTyrSerHis-298

308-ValAspGlySerLysIleValAsp-316

322-IleGluAlaLysAsnLysAlaLeuGluLysThrAspThrAsnPhe-337

347-TyrArgThrLysAspGlyPheGluThrTyrAspLysLeuGlyGluAlaAspArgLysAlaLeu-367

374-LeuAlaGluAspLeuAlaGln-380

750

AMPHI Regions - AMPHI

1-ValLysProArgPheTyrTrpAlaAlaCysAlaValLeuLeuThrAlaCysSerProGluProAlaAlaGluLy
 sThrValSerAlaAlaSerAlaSerAlaAlaThrLeuThrValProThrAlaArgGlyAspAlaValValProLys
 AsnProGluArgValAlaValTyrAspTrpAlaAlaLeuAspThrLeuThrGluLeuGlyValAsnValGlyAlaT
 hrThrAlaProValArgValAspTyrLeuGlnProAlaPheAspLysAlaAlaThrValGlyThrLeuPheGluPr
 oAspTyrGluAlaLeuHisArgTyrAsnProGlnLeuValIleThrGlyGlyProGlyAlaGluAlaTyrGluGln
 LeuAlaLysAsnAlaThrIleAspLeuThrValAspAsnGlyAsnIleArgThrSerGlyGluLysGlnMetG
 luThrLeuAlaArgIlePheGlyLysGluAlaArgAlaGluLeuLysAlaGlnIleAspAlaLeuPheAlaG
 nThrArgGluAlaLysLysGlyArgGlyLeuLeuSerValThrGlyAsnLysValSerAlaPheGly
 ThrGlnSerArgLeuAlaSerTrpIleHisGlyAspIleGlyLeuProProAspTrpIlePheIleAspArgThrAl
 lyHisGlyGlnProValSerPheGluTyrIleLysGluLysAsnProAspTrpIlePheIleAspArgThrAl
 aAlaIleGlyGlnGluGlyProAlaAlaValGluValLeuAspAsnAlaLeuValArgGlyThrAsnAlaTrpLys
 ArgLysGlnIleIleValMetProAlaAlaAsnTyrIleValAlaGlyGlyAlaArgGlnLeuIleGlnAlaAlaG
 luGlnLeuLysAlaAlaPheLysLysAlaGluProValAlaAlaGlyLysLys-321

Antigenic Index - Jameson-Wolf

1-ValLysProArgPheTyrTrpAlaAlaCysAlaValLeuLeuThrAlaCysSerProGluProAlaAlaGluLy
 sThrValSerAlaAlaSerAlaSerAlaAlaThrLeuThrValProThrAlaArgGlyAspAlaValValProLys
 AsnProGluArgValAlaValTyrAspTrpAlaAlaLeuAspThrLeuThrGluLeuGlyValAsnValGlyAlaT
 hrThrAlaProValArgValAspTyrLeuGlnProAlaPheAspLysAlaAlaThrValGlyThrLeuPheGluPr
 oAspTyrGluAlaLeuHisArgTyrAsnProGlnLeuValIleThrGlyGlyProGlyAlaGluAlaTyrGluGln
 LeuAlaLysAsnAlaThrIleAspLeuThrValAspAsnGlyAsnIleArgThrSerGlyGluLysGlnMetG
 luThrLeuAlaArgIlePheGlyLysGluAlaArgAlaGluLeuLysAlaGlnIleAspAlaLeuPheAlaG
 nThrArgGluAlaLysLysGlyArgGlyLeuLeuSerValThrGlyAsnLysValSerAlaPheGly
 ThrGlnSerArgLeuAlaSerTrpIleHisGlyAspIleGlyLeuProProAspTrpIlePheIleAspArgThrAl
 lyHisGlyGlnProValSerPheGluTyrIleLysGluLysAsnProAspTrpIlePheIleAspArgThrAl
 aAlaIleGlyGlnGluGlyProAlaAlaValGluValLeuAspAsnAlaLeuValArgGlyThrAsnAlaTrpLys
 ArgLysGlnIleIleValMetProAlaAlaAsnTyrIleValAlaGlyGlyAlaArgGlnLeuIleGlnAlaAlaG
 luGlnLeuLysAlaAlaPheLysLysAlaGluProValAlaAlaGlyLysLys-321

Hydrophilic Regions - Hopp-Woods

1-ValLysProArgPheTyrTrpAlaAlaCysAlaValLeuLeuThrAlaCysSerProGluProAlaAlaGluLy
 sThrValSerAlaAlaSerAlaSerAlaAlaThrLeuThrValProThrAlaArgGlyAspAlaValValProLys
 AsnProGluArgValAlaValTyrAspTrpAlaAlaLeuAspThrLeuThrGluLeuGlyValAsnValGlyAlaT
 hrThrAlaProValArgValAspTyrLeuGlnProAlaPheAspLysAlaAlaThrValGlyThrLeuPheGluPr
 oAspTyrGluAlaLeuHisArgTyrAsnProGlnLeuValIleThrGlyGlyProGlyAlaGluAlaTyrGluGln
 LeuAlaLysAsnAlaThrIleAspLeuThrValAspAsnGlyAsnIleArgThrSerGlyGluLysGlnMetG
 luThrLeuAlaArgIlePheGlyLysGluAlaArgAlaGluLeuLysAlaGlnIleAspAlaLeuPheAlaG
 nThrArgGluAlaLysLysGlyArgGlyLeuValLeuSerValThrGlyAsnLysValSerAlaPheGly
 ThrGlnSerArgLeuAlaSerTrpIleHisGlyAspIleGlyLeuProProAspTrpIlePheIleAspArgThrAl
 lyHisGlyGlnProValSerPheGluTyrIleLysGluLysAsnProAspTrpIlePheIleAspArgThrAl
 aAlaIleGlyGlnGluGlyProAlaAlaValGluValLeuAspAsnAlaLeuValArgGlyThrAsnAlaTrpLys
 ArgLysGlnIleIleValMetProAlaAlaAsnTyrIleValAlaGlyGlyAlaArgGlnLeuIleGlnAlaAlaG
 luGlnLeuLysAlaAlaPheLysLysAlaGluProValAlaAlaGlyLysLys-321

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AMPHI Regions - AMPHI

-301-

11-AlaAspArgAlaValArgSerAlaThr-19
 59-IleGlnAspThrAsn-63
 82-LeuSerAsnAlaAla-86
 139-LeuAsnAsnLysValPheGlnGlyTyr-147
 156-LeuAsnGlnAspIleTyrArgGluValGlnLysMetGly-168
 215-AsnValGlnAsnAspIleTyrAlaAspValLeu-224
 281-SerTyrPheAlaGluValProLysAlaGlyThrLysGluPheAspAspTyrValLysIleTrpGlyGlu-303

Antigenic Index - Jameson-Wolf

9-ThrGlnAlaAspArgAlaValArg-16
 18-AlaThrAlaProLys-22
 29-LysIleIleAspGluLysThrGlyLysValSerPheAspThrArgGlnIle-45
 50-AspLeuSerLysGluGluLeuAlaSerIleGlnAspThrAsnGlyLysVal-66
 72-ProGlyIlePheAsnAsnArgGluAspSerLeuSerAsnAlaAlaLysClnAsnArgAsnSerThrAsnGlyS-er-96
 104-ProProThrGlyLysTyrLysSerAspSerAsnAsnLysIleLys-118
 137-AspGlnLeuAsnAsnLys-142
 147-TyrLeuProLysThrAsnSerGluLysLeuAsnGlnAspIleTyrArgGluValGlnLysMetGlyAsnGlyTrpSerValAspThrSerAsnHisSerArgGlyGlyIle-183
 190-LysAspTrpValAsnAsnGlnLysGlnAsnGly-200
 203-ProIleArgLysAlaArgPhe-209
 214-ThrAsnValGlnAsnAspTyrAlaAspValLeuGlnLysAsnGlyTyr-229
 233-GlyAlaAspGlyLysThrTyrAsnSerGlySer-243
 247-ValHisAspLysAspPheValGlyLys-256
 263-GlyThrAsnAspThrThrGlnGlyThrCysLysGlyLeuCys-276
 286-ValProLysAlaGlyThrLysGluPheAspAspTyrVal-298
 304-ValGluTyrAspAlaGlnGlyLysProIleAsnLysSerLysProIleLeuValGluProAsnLysThrLysAspAsnGluLysTyrGluLysGluAlaPhe-337

Hydrophilic Regions - Hopp-Woods

10-GlnAlaAspArgAlaValArg-16
 18-AlaThrAlaProLys-22
 29-LysIleIleAspGluLysThrGlyLysValSerPheAspThr-42
 50-AspLeuSerLysGluGluLeuAlaSer-58
 60-GlnAspThrAsnGly-64
 76-AsnAsnArgGluAspSerLeuSerAsnAlaAlaLysGlnAsnArgAsnSerThrAsn-94
 105-ProThrGlyLysTyrLysSerAspSerAsnAsnLysIleLys-118
 151-ThrAsnSerGluLysLeuAsnGlnAspIleTyrArgGluValGlnLysMet-167
 175-ThrSerAsnHisSerArgGlyGlyIle-183
 196-GlnLysGlnAsnGly-200
 203-ProIleArgLysAlaArgPhe-209
 219-AspTyrAlaAspValLeuGln-225
 234-AlaAspGlyLysThrTyrAsn-240
 247-ValHisAspLysAspPheVal-253
 265-AsnAspThrThrGlnGlyThrCys-272
 286-ValProLysAlaGlyThrLysGluPheAspAspTyrVal-298
 304-ValGluTyrAspAlaGlnGlyLysProIleAsnLysSerLysProIleLeu-320
 322-GluProAsnLysThrLysAspAsnGluLysTyrGluLysGluAlaPhe-337
752-2
AMPHI Regions - AMPHI
 6-GluArgMetThrGlnIleAlaLysLeuLeuAsnSerSer-18
 29-PheLeuThrGluIleLysAspTyrSerGluPhe-39

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51-TrpAspLysPheArgArgIle-57
 69-LysLysGluSerArgLysLysIleGlnLysProIleAsp-81
 105-LysSerCysGlySerSerIleGly-112
 114-SerSerLeuGlyGlyPheGly-120
 145-GlyAlaAlaThrThrArgLysValAlaLysAspMetLeuLysSerGln-160
 194-IleLeuAspLeuHisArgIleAlaThrSer-203
 233-GlnProProProHisGly-238
 240-ValHisThrLeuMetGluGluVal-247
 254-ThrTyrAspGlyValGluAsnProPheIleHisProValValGlnAlaIle-270
 272-LeuHisPheLeuIleGlyTyrIleHisPro-281
 309-IleSerIleSerArgLeuLeuLysAsnAlaProAlaGlnTyr-322
 347-IleLysArgAlaValAlaAspLeuGluHis-356
 371-AlaIleAlaGlnTyrThrGluLysIleGlyLysLeu-382
 390-LeuGlnLysAlaValGluGluSerGly-398
 422-SerLysLeuGlyGluTyrArgPhe-429
 435-SerGlyAsnAlaLeuGluIleTyrValAlaPro-444

Antigenic Index - Jameson-Wolf

4-LeuThrGluArgMetThrGln-10
 15-LeuAsnSerSerAlaAsnAsnProAspIleAspIleProAspPheLeuThrGluIleLysAspTyrSerGlu-38
 40-SerValThrAspGluAsnGlyThr-47
 52-AspLysPheArgArgIleHisThrGluAspThrArgMetLysTrpArgAlaValLysGluSerArgLysLysIleGlnLysProIleAsp-81
 92-IleProAspSerLeuGln-97
 102-LeuIleAspLysSerCysGlySerSerIleGly-112
 117-GlyGlyPheGlyArgSerGluGlnAsnArgPheLeu-128
 147-AlaThrThrArgLysValAlaLysAspMetLeuLysSerGlnArgLysProLysThrLysAspGluIle-169
 179-LysLysAlaValGluLeuLysAsnThr-187
 204-AsnAlaLysGluAsnLysAlaGluProGlyGlnPheArgGlnAspAspGluIlePhe-222
 226-IleAsnAlaLysSerLeuTyrGlnProProProHisGly-238
 253-AsnThrTyrAspGlyValGluAsnProPhe-262
 280-HisProPheGlyAspGlyAsnGlyArgThrAlaArg-291
 313-ArgLeuLeuLysAsnAlaPro-319
 330-GluThrAspAspLeuAsp-335
 342-TyrGlnCysAspIleIleLys-348
 358-IleSerAspLysGlnLysHisGlnGlnGluPheLysAla-370
 375-TyrThrGluLysIleGlyLysLeuAsnGlnArgGln-386
 392-LysAlaValGluGluSerGlyLys-399
 415-AsnThrAlaArgSerAspLeuSerLysLeuGlyGluTyrArgPhe-429
 433-PheLysSerGlyAsnAlaLeu-439
 445-GlnAspLeuLeuGluArgLeuGluLysLys-454

Hydrophilic Regions - Hopp-Woods

4-LeuThrGluArgMetThrGln-10
 19-AlaAsnAsnProAspIleAspIle-26
 31-ThrGluIleLysAspTyrSerGlu-38
 40-SerValThrAspGluAsnGly-46
 52-AspLysPheArgArgIleHisThrGluAspThrArgMetLysTrpArgAlaValLysGluSerArgLysLysIleGlnLysProIle-80
 102-LeuIleAspLysSerCysGly-108
 120-GlyArgSerGluGlnAsnArgPheLeu-128
 147-AlaThrThrArgLysValAlaLysAspMetLeuLysSerGlnArgLysProLysThrLysAspGluIle-169

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179-LysLysAlaValGluLeuLysAsn-186
 204-AsnAlaIleGluasnLysAlaGluProGlyGlnPheArgGlnAspAspGluIlePhe-222
 283-GlyAspGlyAsnGlyArgThrAlaArg-291
 330-GluThrAspAspLeuAsp-335
 358-IleSerAspLysGlnLysHisGlnGlnGluPheLysAla-370
 375-TyrThrGluLysIleGlyLysLeuAsnGlnArgGln-386
 392-LysAlaValGluGluSerGlyLys-399
 416-ThrAlaArgSerAspLeuSerLysLeuGlyGlu-426
 446-AspLeuLeuGluArgLeuGluLysLys-454
753

AMPHI Regions - AMPHI
 44-IleValGluMetMetThrTyrIleLeu-52
 75-TrpAlaTyrPheAspGluValAlaGln-83
 109-GlnTrpPheAlaProLeu-114
 121-ArgSerAlaValArgGlnLeu-127
 129-ProSerThrThrValArgAla-135

Antigenic Index - Jameson-Wolf
 13-LysLeuTyrProAsnGluGlnTrpAsnGluSerGluAla-25
 34-TyrGlnSerProThrHisArgGln-41
 55-LeuLysAsnGlyGln-59
 64-CysLysGlyThrGlnProIleGly-71
 85-HisTyrLeuGluSerAspArgHisLeuArgAspAsnSerAspTrpAsnCysGlyAspAsnIle-105
 112-AlaProLeuGlyHisSerHisGlnMetArgSerAlaVal-124
 136-LeuTyrHisLysGlySerAspLysGlyLeuArg-146

Hydrophilic Regions - Hopp-Woods
 19-GlnTrpAsnGluSerGluAla-25
 87-LeuGluSerAspArgHisLeuArgAspAsnSerAsp-98
 139-LysGlySerAspLysGlyLeuArg-146
754
AMPHI Regions - AMPHI
 29-ArgIleGlyThrLeuGluLysGlyAlaMet-38
 67-MetProHisIlePheAlaGlnTyrPheProGluGlyPheLeuAsp-81
 108-ArgGluThrLeuGlyArg-113
 121-ProLeuPheAsnGluTrpIleAspGlyLeuGlu-131
 152-PheGlnGlnTyrMetAlaGluIle-159
 161-HisHisGlyArgPheValSerValSer-169
 181-ArgArgAsnThrLys-185
 189-SerTyrIleAlaLysGly-194
 249-MetGluAspPheThrSerLeuArgGln-257
 269-AlaAlaIleAlaGlnIleIleArgGlnIleSerGlyArgProAsp-283
 288-HisPhePheAsnGlnLeuAlaAla-295
 324-ValTyrAspValLeuAspThr-330
 336-GlyThrGlnGlyIlePheAspAlaTyrAsp-345
 399-TyrSerAspValLeu-403

Antigenic Index - Jameson-Wolf
 8-ValSerGlyAsnArgMetArgLysProArg-17
 25-AlaAsnAspGluArgIleGlyThrLeuGluLysGlyAla-37
 43-TyrAspAsnProAsnSerSerLeu-50
 54-HisTyrGlnAspArgSerLysVal-61
 75-PheProGluGlyPheLeu-80
 93-AlaProPheGluAspAsnGluMetLeu-101
 114-IleHisValArgCysAsnAspProLeuPhe-123

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130-LeuGluMetLysAsnProArgIleLeuThrGluArgAspLeuLeu-144
 163-GlyArgPheValSer-167
 170-GlyIleGlnGlnLysMetSerLeuAspAlaIleArgArgAsnThrLysGlnThrAla-188
 194-GlyPheAspAlaSerGluTyrProCys-202
 224-ThrSerLeuSerGluAspSerSer-231
 236-ArgArgPheAspValSerGluGlnGlyTyr-245
 250-GluAspPheThrSer-254
 256-ArgGlnTyrSerValGluAspLysTyrLysGlySerTyr-268
 278-IleSerGlyArgProAspGluAspLeu-286
 299-LeuLysAsnGlyAspAlaHisLeu-306
 315-AspGluTyrAspVal-319
 343-AlaTyrAspAspThrLeu-348
 352-LeuThrAsnHisGlyLysLysThrTyrProSerLysAsnThr-365
 369-PheAlaGluLysTyrCysAspLeuGlyArgGluAspAlaSerPhe-383
 389-ValGlnAlaLysGluGlnVal-395
 399-TyrSerAspValLeuArgGluAsnGluTrpLeu-409
 415-PheIleProAspGluAsnGluGluGlyLeu-424

Hydrophilic Regions - Hopp-Woods

10-GlyAsnArgMetArgLysProArg-17
 25-AlaAsnAspGluArgIleGlyThrLeuGluLysGlyAla-37
 55-TyrGlnAspArgSerLysVal-61
 93-AlaProPheGluAspAsnGluMetLeu-101
 114-IleLeuGluAspAsnAsp-120
 130-LeuGluMetLysAsnProArgIleLeuThrGluArgAspLeuLeu-144
 175-MetSerLeuAspAlaIleArgArgAsnThrLysGln-186
 194-GlyPheAspAlaSerGlu-199
 225-SerLeuSerGluAspSerSer-231
 236-ArgArgPheAspValSerGlu-242
 250-GluAspPheThrSer-254
 258-TyrSerValGluAspLysTyrLysGly-266
 278-IleSerGlyArgProAspGluAspLeu-286
 300-LysAsnGlyAspAlaHisLeu-306
 315-AspGluTyrAspVal-319
 354-AsnHisGlyLysLysThrTyrProSer-362
 369-PheAlaGluLysTyrCysAspLeuGlyArgGluAspAlaSerPhe-383
 389-ValGlnAlaLysGluGlnVal-395
 401-AspValLeuArgGluAsnGluTrpLeu-409
 417-ProAspGluAsnGluGluGlyLeu-424
755

AMPHI Regions - AMPHI

22-AsnAsnTyrThrAsnAlaTyrSerAspIleLysThrIle-34
 38-HisGlyPheGluAsnIleGlnGly-45
 75-SerCysIleSerAsnIleLysPhe-82
 124-GluGlnIleAsnGlnValLeu-130

Antigenic Index - Jameson-Wolf

10-MetAspThrAsnCysLeuLysAspAsnTyrHisGlyAsnAsnTyrThrAsnAlaTyrSerAsp-30
 42-AsnIleGlnGlySer-46
 48-TyrLeuGlyArgGluGlyIleSerGluAlaHis-58
 83-TyrArgLeuGluSerAspLeu-89
 108-ArgValGluGlnLeuArg-113
 120-GlyLeuSerAspGluGlnIle-126
 129-ValLeuGluLysGlnLysPheGluLeuGluSerProAsnLeuLys-143

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Hydrophilic Regions - Hopp-Woods

10-MetAspThrAsnCysLeuLysAspAsnTyrHis-20
49-LeuGlyArgGluGlyIleSerGluAlaHis-58
83-TyrArgLeuGluSerAspLeu-89
108-ArgValGluGlnLeuArg-113
120-GlyLeuSerAspGluGlnIle-126
129-ValLeuGluLysGlnLysPheGluLeuGluSerProAsnLeu-142
756

AMPHI Regions - AMPHI

6-AlaGlnThrLeuValGluIleGlnAspSerLeuTyrArgValValSerThrVal-23
29-AsnLeuLysArgLeuThr-34
57-AspPheLysGluThrLeuValArgPheGlyArgAspMetLeuGlnAspMetPro-74
98-TyrLeuGluTyrLeuLysGlnValAlaSer-107
113-GluArgLeuTyrAsnAlaValAspArgLeuAlaGluSerGlnGluArg-128
130-ThrSerAlaIleLeu-134
136-GlyAlaArgGlyAlaAspPhe-142

Antigenic Index - Jameson-Wolf

11-GluIleGlnAspSerLeuTyr-17
24-GlnTyrGlyAspAspAsnLeuLysArgLeuThrAlaAspLysArgLysGlnTyr-41
45-PheLysIleSerGluGlySerThrArgValGluSerAspPheLysGluThrLeu-62
65-PheGlyArgAspMetLeuGlnAspMetProProLysIleArgSer-79
105-ValAlaSerGluGlyTyrGlnThrGluArgLeuTyrAsnAlaValAspArgLeuAlaGluSerGlnGluArg
IleThr-130
135-LysGlyAlaArgGlyAlaAsp-141
144-GlnIleGlyArgArgSerTyrSerArgGluAspIleSerGluAlaAsnArgArgAlaGluArgValProTyr
-167
171-LeuValSerAspGlyAsn-176
182-SerAspIleGlyAsp-186

Hydrophilic Regions - Hopp-Woods

11-GluIleGlnAspSerLeu-16
25-TyrGlyAspAspAsnLeuLysArgLeuThrAlaAspLysArgLysGlnTyr-41
45-PheLysIleSerGluGlySerThrArgValGluSerAspPheLysGluThrLeu-62
65-PheGlyArgAspMetLeuGln-71
73-MetProProLysIleArgSer-79

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114-ArgLeuTyrAsnAlaValAspArgLeuAlaGluSerGlnGluArgIleThr-130

135-LysGlyAlaArgGlyAlaAsp-141

144-GlnIleGlyArgArgSerTyrSerArgGluAspIleSerGluAlaAsnArgArgAlaGluArgValProTyr
-167

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AMPHI Regions - AMPHI

47-AspTyrGlnSerAlaAlaAsnLys-54

79-AsnLeuLeuHisAspPheSerAspGlyLeu-88

97-LysAlaAspLysIleThr-102

115-GlnLysAlaGluLysLeuSerLysAlaAla-124

140-ArgAspThrGlyAsp-144

154-AsnAlaGlnLysGluProThrArgGluTrpAla-164

Antigenic Index - Jameson-Wolf

16-AlaCysGlySerGlnSerGluGluGlnProAlaSerAlaGlnProGlnGluGlnAlaGlnSerGluLeuLysT
hrMetPro-42

46-ThrAspTyrGlnSerAlaAlaAsnLysGlyLeuAsnAspGlnLysThrGlyLeuThrLeu-65

73-AspAsnAlaGluGlyLysAsnLeuLeuHisAspPheSerAspGlyLeu-88

93-ValAspThrAspLysAlaAspLysIleThrAla-103

108-TrpAsnThrAspAlaMetProGlnLysAlaGluLysLeuSerLys-122

132-AlaProGluAspArgThrMetLeuArgAspThrGlyAspGlnIleGluMetAlaIleAspSerHisAsnAla
GlnLysGluProThrArgGluTrpAlaArgGlyGlyIle-168

Hydrophilic Regions - Hopp-Woods

19-SerGlnSerGluGluGlnProAla-26

29-GlnProGlnGluGlnAlaGlnSerGluLeuLysThr-40

50-SerAlaAlaAsnLysGlyLeuAsnAspGlnLysThr-61

73-AspAsnAlaGluGlyLysAsnLeu-80

93-ValAspThrAspLysAlaAspLysIleThrAla-103

112-AlaMetProGlnLysAlaGluLysLeuSerLys-122

132-AlaProGluAspArgThrMetLeuArgAspThrGlyAspGlnIleGluMetAlaIle-150

152-SerHisAsnAlaGlnLysGluProThrArgGluTrpAlaArg-165

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AMPHI Regions - AMPHI

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15-AlaThrLeuAlaAspGluLeuGlnTyrVal-24
 53-AlaGluValAlaAla-57
 60-GlnThrValIleSerGluIleValArgArgHisThr-71
 87-ProTyrLeuGlyGlyLeuProGluAlaLeuHisThr-98
 125-PheAlaSerProGlyGlyTrpGlnIleIleGly-135

Antigenic Index - Jameson-Wolf

9-ArgPheAspThrAspLeu-14
 32-AspHisGlnGlyLysLeuVal-38
 44-TyrGlyGlyGluTyrGlyProAspLeuAlaGlu-54
 66-IleValArgArgHisThrAla-72
 96-LeuHisThrProArgArgAlaValProArgThrSerValPro-109
 115-IleGlyGlySerGln-119
 145-AspLeuAsnProPro-149
 154-AlaGlyAspGlnValArgPheValAlaGluArgIleGluPro-167

Hydrophilic Regions - Hopp-Woods

10-PheAspThrAspLeu-14
 32-AspHisGlnGlyLysLeuVal-38
 48-TyrGlyProAspLeuAlaGlu-54
 66-IleValArgArgHisThr-71
 97-HisThrProArgArgAlaValPro-104
 156-AspGlnValArgPheValAlaGluArgIleGluPro-167
759

AMPHI Regions - AMPHI

8-ProPheCysSerValLeuSerThrLeuGlyLeu-18
 35-TyrGlnTyrPheArgAspPheAlaGlu-43
 63-LysIleLeuGlyArgValLeuAsnGlyIlePro-73
 94-TyrValAsnSerVal-98
 140-ArgLeuAsnLysLeuValThrGluIle-148
 185-ThrGlnGlnValArgLysAlaAsp-192
 207-GlyGlyThrProLeu-211
 261-LeuSerThrTyrAlaGlyPheAspAsnPhePheAsnLys-273
 282-IleArgSerThrIle-286
 313-ThrLeuGlnGlyLeu-317
 408-LysGlyAspArgLeuSerLysLeuGlyAla-417
 446-AlaSerAspGlySerLysGlnAla-453
 548-ValTyrGluTyrIle-552
 597-GluGlnValAlaGlnAlaGlu-603
 764-LysThrProGlyCysTyrArgSerTyrHisSer-774
 788-GluAsnTyrArgAlaLeu-793
 820-SerIleArgAlaGlyLys-825
 878-ThrLeuAspGlyPheGlyThrPheArgPheLeuThrGlyIle-891
 921-ProGlnThrThrGlu-925
 948-TyrAlaAspLeuGlyAlaTyr-954
 967-LeuTyrAsnProLeuLys-972
 992-TyrAsnGlnLeuGlnAlaThrAspIleSerArgGlnValGln-1005
 1013-GlnAlaLeuClnAlaTrpGlnAsnSerGln-1022
 1040-LysGlnThrAspProLeuThrGlyIleLeuThr-1050
 1062-SerAlaAspIleCysArgGlnValAlaLysAlaAlaAspThr-1075
 1084-GluLeuAspThrTyr-1088
 1102-AlaArgGlnGlyGlyAspAlaGlnAlaValGluThrAlaArgHisAlaTyrLeuAsnAlaLeuAsnArgLe
 uSerArgGlnIleHisSerLeu-1132
 1139-IleArgMetProAsnLeuAlaGluLeuIleSerArgSerAlaAsnThrAla-1155
 1168-GlnAlaGlyArgArgIleAspArgHisLeuThrAspPro-1180

1199-GlyThrHisArgProTyrGlnGlnThrThrAsn-1209
 1234-ThrAsnAsnArgPheAspGlu-1240
 1328-GluIleAsnSerProAlaGlnIle-1335
 1346-AspLysThrValGlu-1350
 1385-GlnAlaAlaHisGlyThrLeu-1391

Antigenic Index - Jameson-Wolf

29-ValArgAsnAspValAspTyrGlnTyr-37
 40-AspPheAlaGluAsnLysGlyAla-47
 56-SerIleGlnAspLysGlnGlyLysIleLeu-65
 73-ProMetProAspPheArgValSerAsnArgGlnThrAla-85
 110-GlyAsnAspThrGlnAsnProGluGluGlnAlaTyr-121
 125-LeuValSerArgAsnProHisProAspTyrAspTyrHisLeuProArgLeuAsnLysLeuValThr-146
 148-IleSerProThrAla-152
 160-GlyAsnGlyGlnProLysAla-166
 168-AlaTyrLeuAspThrAspArgPhePro-176
 181-LeuGlySerGlyThrGlnGlnValArgLysAlaAspGlyThrArgThrArgThrAlaPro-200
 206-ThrGlyThrProLeuLys-212
 226-SerLeuIleAspGlnProLeuAsn-233
 238-AlaGlyAspSerGlySerPro-244
 249-AspLysHisGluAsnArg-254
 285-ThrIleArgGlnTyrGluThrArgLeuAspVal-295
 303-IleTrpArgAspAsnGlyAsnGlyAsnSerThr-313
 316-GlyLeuAsnGlnIleArgIleThr-322
 327-AsnProSerLeuIlaProGlnAsnAspSerArgHisMetProSerGluAspAlaGlyLys-346
 350-LeuSerSerArgPheAspAsnLysThr-358
 364-AsnIleAsnGlnGlyAla-369
 382-GlyLysAsnHisThr-386
 394-ValIleAspGlyLysArgValPhe-401
 404-ValSerAsnProLysGlyAspArgLeuSerLysLeuGlyAla-417
 424-GlyGlnGlyIleAsnGlnGlyAspIleSerIleGlyGluGlyThr-438
 444-LysAlaIlaSerAspGlySerLysGlnAla-453
 459-IleThrSerGlyArgGlyThr-465
 469-AlaAspSerGlnIleLysProGluAsn-478
 483-PheArgGlyGlyArgLeuAspLeuAsnGlyAsnAsnLeu-495
 501-ArgHisAlaAspGlyGlyAla-507
 512-HisAsnProAspGlnAlaAla-518
 528-LeuSerProGluHisValGlu-534
 538-TrpGlyAsnArgProGlnGlyAsn-545
 553-AsnProHisArgAsnArgArgThrAsp-561
 566-LysProGlyGlyAsnProArgGlu-573
 577-LeuAsnMetLysAsnSerThrSer-584
 589-GlyAsnAsnArgGlnGlnAlaAlaGluGlnValAlaGlnAlaGluAsnAlaArgProAspLeu-609
 614-GlyTyrLeuGlyGluAsnAlaGlnThrGlyLysAlaAlaProSerTyrSerLysThrAsnGluAlaAlaIle
 GluLysThrArgHis-642
 650-GlyArgProGluTyrArgTyrAsnGly-658
 664-TyrArgProLysArgThrAspSer-671
 677-GlyGlyMetAsnLeuAsnGly-683
 694-ValSerGlyArgProValProHisAlaTyrAspHisGlnAlaLysArgGluProValLeuGluAsnGluTrp
 ThrAspGlySerPheLysAla-724
 726-ArgPheThrLeuArgAsnHisAla-733
 736-ThrAlaGlyArgAsnThrAlaHisLeuAspGlyAspIleThr-749
 761-ThrGlnGlyLysThrProGluCysTyrArgSerTyrHisSerGlySerThrHis-778
 785-LeuLysAlaGluAsnTyrArg-791
 796-ThrGlnValArgGlyAspIleThrLeuAsnAspArgSerGluLeuArgLeuGlyLys-814

820-SerIleArgAlaGlyLysAspThrAlaValArgMetGluAlaAspSerAsnTrpThr-838
 840-SerGlnSerSerHisThrGly-846
 859-ProAspPheAlaAsnAsnThrHisAsnAsnArgPheAsn-871
 877-GlyThrLeuAspGly-881
 891-IleValArgLysGlnAsnIlaProProLeuLysLeuGluGlyAspSerArgGlyAla-909
 914-VallLysAsnThrGlyGlnGluProGlnThrThrGluSer-926
 932-LeuAsnProLysHisSerHisGln-939
 957-IleLeuArgLysAsnAsnAsnGlyTyr-965
 969-AsnProLeuLysGluAlaCluLeuGlnIleGluAlaThrArgAlaGluHisGluArgAsnGlnGlnAla-99
 1
 999-AspIleSerArgGlnValGlnHisAspSerAspAlaThrArgGlnAla-1014
 1018-TrpGlnAsnSerGlnThrGluLeuAlaArgIleAspSerGln-1031
 1039-LeuLysGlnThrAspProLeuThr-1046
 1064-AspIleCysArgGlnValAlaLysAlaAlaAspThrAsnAsp-1077
 1083-ThrGluLeuAspThrTyrIleGluArgValGluMetAlaGluSerGluLeuAspLysAlaArgGlnGlyGl
 yAspAlaGlnAla-1110
 1123-AsnArgLeuSerArg-1127
 1147-LeuIleSerArgSerAlaAsnThrAlaValSerGlu-1158
 1160-AlaAlaTyrAsnThrGlyArgGlnAlaClyArgIleAspArgHisLeuThrAspProGlnGlnGl
 nAsn-1184
 1188-GluThrGlyThrGlnGlnThrAspTyrHisSerGlyThrHisArgProTyrGlnGlnThrThrAsn-1209
 1219-IleThrAspArgLeuSer-1224
 1229-LeuThrAspGluArgThrAsnAsnArgPheAspGluGlyValSerAlaArgAsnArgSerAsnGly-1250
 1255-ValLysGlyGluAsnGlyAla-1261
 1269-GlyTyrSerAsnSerArgThrArgPheThrAspTyrAspGlyAlaAlaValArg-1286
 1288-HisAlaTrpAspAlaGlyIleAsnThrGlyIleLysIleAspThrGlyIle-1304
 1313-AргIleAsnArgSerAsnGlyAsnArgTyrVal-1323
 1326-GlyAlaGluIleAsnSerProAlaGlnIleGln-1336
 1343-IleArgLeuAspLysThrValGlu-1350
 1360-PheSerSerAspTyrTyrHisthRArgGlnAsnSerGlySerAla-1374
 1376-SerValAsnAspArgThrLeu-1382
 1398-AlaGlyTyrLysGlyTrpAsn-1404
 1411-TyrGlyLysAspSerAsnThrAlaArgHisLysGlnAlaGly-1424

Hydrophilic Regions - Hopp-Woods

29-ValArgAsnAspValAsp-34
 40-AspPheAlaGluAsnLysGly-46
 56-SerIleGlnAspLysGlnGlyLysIleLeu-65
 75-ProAspPheArgValSerAsnArgGlnThr-84
 111-AsnAspThrGlnAsnProGluGluGlnAlaTyr-121
 129-AsnProHisProAspTyr-134
 140-ArgLeuAsnLysLeuValThr-146
 162-GlyGlnProLysAla-166
 170-LeuAspThrAspArg-174
 186-GlnGlnValArgLysAlaAspGlyThrArgThrArgThr-198
 249-AspLysHisGluAsn-253
 285-ThrIleArgGlnTyrGluThrArgLeuAspVal-295
 306-AspAsnGlyAsnGly-310
 317-LeuAsnGluArgIleThr-322
 332-ProGlnAsnAspSerArgHisMetProSerGluAspAlaGlyLys-346
 352-SerArgPheAspAsnLysThr-358
 395-AlaAspGlyLysArg-399
 406-AsnProLysGlyAspArgLeuSerLys-414
 444-LysAlaalaSerAspGlySerLysGlnAla-453
 472-GlnGlnIleLysProGlu-477

-310-

484-ArgGlyGlyArgLeuAspLeuAsnGly-492
 501-ArgHisAlaAspGlyGly-506
 555-HisArgAsnArgArgThrAsp-561
 568-GlyGlyAsnProArgGlu-573
 591-AsnArgGlnAlaAlaGluGlnValAlaGlnAlaGluAsnAlaArgProAsp-608
 619-AsnAlaGlnThrGlyLysAlaAlaProSerTyrSerLysThrAsnGluAlaAlaIleGluLysThrArgHis-642
 652-ProGluTyrArgTyr-656
 664-TyrArgProLysArgThrAspSer-671
 705-HisGlnAlaLysArgGluProValLeu-713
 736-ThrAlaClyArgAsn-740
 744-LeuAspGlyAspIleThr-749
 764-LysThrProGluCysTyrArg-770
 785-LeuLysAlaGluAsnTyrArg-791
 797-GlnValArgGlyAspIleThrLeuAsnAspArgSerGluLeuArgLeuGlyLys-814
 822-ArgAlaClyLysAspThrAlaValArgMetGluAlaAspSer-835
 891-IleValArgLysClnAsnAlaPro-898
 900-LeuLysLeuGluGlyAspSerArgGly-908
 916-AsnThrGlyGlnGluProGlnThrThrGlu-925
 934-ProLysHisSerHis-938
 957-IleLeuArgLysAsnAsnAsn-963
 970-ProLeuLysGluAlaGluLeuGlnIleGluAlaThrArgAlaGluHisGluArgAsnGlnGln-990
 1004-ValGlnHisAspSerAspAlaThrArgGlnAla-1014
 1021-SerGlnThrGluLeuAlaArgIleAspSer-1030
 1039-LeuLysGlnThrAspPro-1044
 1064-AspIleCysArgGlnValAlaLysAlaAlaAspThrAsnAsp-1077
 1087-ThrTyrIleGluArgValGluMetAlaGluSerGluLeuAspLysAlaArgGlnGlyGlyAspAlaGlnAla-1110
 1164-ThrGlyArgGlnAlaGlyArgArgIleAspArgHisLeuThrAspProGlnGln-1182
 1200-ThrHisArgProTyrGln-1205
 1219-IleThrAspArgLeuSer-1224
 1229-LeuThrAspGluArgThrAsnAsnArgPheAspGluGlyValSerAlaArgAsnArgSerAsnGly-1250
 1272-AsnSerArgThrArgPheThrAspTyrAspGlyAlaAlaValArg-1286
 1298-IleLysIleAspThr-1302
 1313-ArgIleAsnArgSerAsnGly-1319
 1326-GlyAlaGluIleAsnSer-1331
 1343-IleArgLeuAspLysThrValGlu-1350
 1376-SerValAsnAspArgThrLeu-1382
 1411-TyrGlyLysAspSerAsnThrAlaArgHisLysGlnAlaGly-1424
 760
AMPHI Regions - AMPHI
 16-ThrValLeuAlaAlaLeuSerSer-23
 29-GlnThrGluGlyLeu-33
 40-GlyGlnArgSerTyr-44
 58-PheAlaAlaThrValGlyThrLys-65
 67-ProAlaSerLeuArgGluIleProGlnSerVal-77
 88-ArgAsnValAspThrPheAspGlnLeuAlaArg-98
 131-ProAlaGlnMetGlnSerIleAsnGlyThrLeuProAsnLeuPheAlaPheAspArgValGluValMetArgGlyProSerGlyLeuPheAspSerSerGlyGluMetGlyGlyIleValAsnLeuValArgLysArgProThrLysAlaPheGlnGlyHisAlaAlaAla-187

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190-GlyThrHisLysGln-194

277-SerLeuProGlnHis-281

296-HisAspValPheAlaAspLeuLysHis-304

334-LeuAsnAsnThrGlyGlnAla-340

381-ArgLeuArgSerThr 385AsnGluGlnGlyArgSerThr-392

398-AlaLeuAspGlyPheArgAlaLeuPro-406

419-LysGlyPheAsnHisSer-424

438-LysThrValPheArgProLeuGluGlyLeuSerLeuIleAlaGly-452

465-GlyLysThrLeuHisLysAlaSerLys-473

515-ProArgGluGlyAsnGln-520

565-GlyLysArgValMetGluGlyValGlu-573

617-AlaAsnLeuTrpThrThrTyr-623

635-ValAsnAlaMetSerGlyIleThrSerSer-644

650-GlyGlyTyrAlaThrPheAspAlaMetAlaAla-660

Antigenic Index - Jameson-Wolf

29-GlnThrGluGlyLeuGlu-34

37-HisIleLysGlyGlnArgSer TyrAsn-45

48-AlaThrGluLysAsnGlyAspTyrSerSer-57

68-AlaSerLeuArgGluIleProGln-75

83-GlnGlnValLysAspArgAsnValAspThrPheAspGlnLeuAlaArgLysThrProGlyLeuArgValLeuSerAsnAspAspGlyArgSer-113
118-ArgGlyTyrGluTyrSerGluTyrAsnIleAspGlyLeu-130

148-AspArgValGluValMetArgGlyProSerGlyLeuPheAspSerSerGlyGluMetGlyGly-168

173-ValArgLysArgProThrLysAlaPhe-181

190-GlyThrHisLysGlnTyrLysAlaGluAlaAspValSerGlySerLeuAsnSerAspGlySerValArgGlyArgVal-215

221-GlyAlaSerProArgProAlaGluLysAsnAsnArgArgGluThr-235

242-TrpAspIleAsnProAspThrValLeu-250

257-GlnGlnArgArgLeuAlaProTyrAsn-265

268-ProAlaAspAlaAsnAsnLysLeuProSerLeu-278

306-PheGlyAsnGlyGlyTyrGly-312

314-ValGlyMetArgTyrSerAspArgLysAlaAspSerAsnTyr-327

330-AlaGlySerLysLeuAsnAsnThrGlyGlnAlaAsp-341

346-GlyThrAspIleLysGlnLysAlaPheAlaValAspAlaSerTyrSerArgProPhe-364

378-AspTyrAsnArgLeuArgSerThrAsnGluGlnGlyArgSerThrLeuSerLysSerValAla-398

413-AsnAlaArgAlaGlyAsnLysGlyPheAsn-422

424-SerValThrGluGluAsnLeuAspGluThrGlyLeu-435

451-AlaGlyGlyArgValGlyHisHisLysIleGluSerGlyAspGlyLysThrLeuHisLysAlaSerLysThrLysPhe-476

-312-

485-AspIleAspGlySerAsnSerLeu-492
 501-ThrProGlnThrSerIleGlyThrAspGlyLysLeuLeuLysProArgGluGlyAsnGln-520
 524-GlyTyrLysGlySerTyrMetAspAspArgLeuAsnThr-536
 542-ArgMetLysAspLysAsnAla-548
 551-ProLeuAspSerAsnAsnLysLysThrArgTyr-561
 563-AlaLeuGlyIleGluThrGluIle-576
 596-GlnIleLysThrAlaSerAsnSerArgAspGluGlyIle-608
 614-LysHisSerAlaAsnLeu-619
 663-PheThrProLysLeuLysLeu-669
 671-IleAsnAlaAspAsnIlePhe-677
 685-ValGlySerGluSerThrPheAsnIleProGlySerGluArgSerLeu-700

Hydrophilic Regions - Hopp-Woods

39-LysGlyGlnArgSer-43
 48-AlaThrGluLysAsnGlyAsp-54

 68-AlaSerLeuArgGluIleProGln-75
 84-GlnValLysAspArgAsnValAspThr-92

 94-AspGlnLeuAlaArgLysThrProGly-102

 106-LeuSerAsnAspAspGlyArgSer-113

 148-AspArgValGluValMetArgGlyPro-156

 162-SerSerGlyGluMet-166

 173-ValArgLysArgProThrLys-179

 193-LysGlnTyrLysAlaGluAlaAspVal-201
 205-LeuAsnSerAspGlySerValArgGlyArgVal-215

 222-AlaSerProArgProAlaGluLysAsnAsnArgArgGluThr-235

 242-TrpAspIleAsnPro-246

 257-GlnGlnArgArgLeuAla-262

 268-ProAlaAspAlaAsnAsnLysLeu-275

 314-ValGlyMetArgTyrSerAspArgLysAlaAspSer-325

 247-ThrAspIleLysGlnLysAlaPheAla-355
 378-AspTyrAsnArgLeuArgSerThrAsnGluGlnGlyArgSerThrLeuSer-394

 414-AlaArgAlaGlyAsnLysGlyPhe-421

 425-ValThrGluGluAsnLeuAspGlu-432

 454-ArgValGlyHisHisLysIleGluSerGlyAspGlyLysThrLeuHisLysAlaSerLysThrLysPhe-476

 506-IleGlyThrAspGlyLysLeuLeuLysProArgGluGlyAsnGln-520

-313-

528-SerTyrMetAspAspArgLeuAsnThr-536

542-ArgMetLysAspLysAsnAla-548

551-ProLeuAspSerAsnAsnLysLysThrArgTyr-561

563-AlaLeuGlyLysArgValMetGluGlyValGluThrGluIle-576

597-IleLysThrAlaSerAsnSerArgAspGluGly-607

695-GlySerGluArgSerLeu-700

761

AMPHI Regions - AMPHI

51-LysGlyTyrIleAsn-55

70-GluThrProGlnThrIleAspThrLeuAsnIle-80

89-AsnAspLeuSerSerIleLeuGlu-96

125-TyrArgAspGlyValArg-130

137-ArgSerThrAlaAsn-141

143-GluArgValGluIleLeuLysGlyProSer-152

164-ValIleAsnMetValSerLysTyrAlaAsnPheLysGlnSerArgAsnIleGlyAlaValTyrGlySerTrp
Ala-188

249-TyrAspAsnValGluArgThrProAspArgSerProThrLysSerVal-264

316-AspPheAspHisPheTyrAla-322

388-IleAsnProTyrAspArg-393

452-SerSerArgGlnTyr-456

475-HisThrLeuTyrAlaSerTyrAsnLysGlyPhe-485

511-TyrThrArgGlnTyrGlu-516

526-AspArgLeuSerThrThr-531

568-LeuSerIleGlyGlnIleIle-575

608-AsnThrSerAsnVal-612

651-LeuProGlyPheAlaArgValAspAlaMet-660

Antigenic Index - Jameson-Wolf

23-AlaAspThrGlnAspAsnGlyGluHis-31

43-GlyGlnSerAspThrSerValLeu-50

54-IleAsnTyrAspGluAlaAlaValThrArgAsnGlyGlnLeuIleLysGluThrProGlnThrIle-75

79-AsnIleGlnLysAsnLysAsnTyrGlyThrAsnAsp-90

97-GlyAsnAlaGlyIle-101

103-AlaAlaTyrAspMetArgGlyGluSerIlePhe-113

117-PheGlnAlaAspAlaSerAspIleTyrArgAspGlyValArgGluSerGlyGlnValArgArgSerThrAla
AsnIleGluArgValGluIleLeuLysGlyProSerSer-153

157-GlyArgThrAsnGlyGlyGly-163

172-AlaAsnPheLysGlnSerArgAsnIleGly-181

187-TrpAlaAsnArgSerLeuAsnMetAspIle-196

198-GluValLeuAsnLysAsnValAlaIle-206

208-LeuThrGlyGluValGlyArgAlaAsnSerPheArgSerGlyIleAspSerLysAsnVal-227

235-ValLysLeuAspAsnGlyLeuLysTrpThrGlyGlnTyrThrTyrAspAsnValGluArgThrProAspArg
SerProThrLysSerValTyrAspArgPheGlyLeuProTyr-272

276-PheAlaHisArgAsnAspPheValLysAspLysLeuGln-288

290-TrpArgSerAspLeuGluTyrAlaPheAsnAspLysTrpArgAlaGlnTrp-306

312-ThrIlaAlaGlnAspPhe-317

322-AlaGlySerGluAsnGlyAsnLeuIleLysArgAsnTyrAlaTrpGlnGlnThrAspAsnLysThrLeuSer
-345

366-GlyMetAspTyrSerArgGluHisArgAsnProThrLeu-378

389-AsnProTyrAspArgAlaSerTrpProAlaSerGlyArgLeuGlnPro-404

407-ThrGlnAsnArgHisLysAlaAspSer-415
 425-SerAlaThrProAspLeuLysPheValLeuGlyGlyArgTyrAspLysTyrThrPheAsnSerGluAsnLys
 LeuThrGlySerSerArgGlnTyrSerGlyHisSerPheSerProAsn-464
 481-TyrAsnLysGlyPheAlaProTyrGlyGlyArgGlyGly-493
 506-AsnAlaAspProGluTyrThrArgGlnTyrGluThrGlyValLysSerSerTrpLeuAspAspArgLeuSer
 Thr-530
 539-ArgPheAsnIleArgTyrArgProAspProLysAsnAsnPro-552
 557-ValSerGlyLysHisArgSerArgGlyValGlu-567
 575-IleProLysLysLeuTyrLeu-581
 591-LysValValGluAspLysGluAsnProAspArgValGly-603
 607-AsnAsnThrSerAsnVal-612
 619-ArgTyrThrProThrGluAsnLeuTyr-627
 634-GlyThrGlyLysArgTyrGlyTyrAsnSerArgAsnLysGluValThrThr-650
 663-TrpAsnHiLysAsn-667
 678-LeuAsnGlnLysTyrTrpArgSerAspSerMetProGlyAsnProArgGlyTyrThrAla-697

Hydrophilic Regions - Hopp-Woods

24-AspThrGlnAspAsnGlyGlu-30
 43-GlyGlnSerAspThrSerVal-49
 57-AspGluAlaAlaValThrArg-63
 66-GlnLeuIleLysGluThrProGlnThr-74
 81-GlnLysAsnLysAsnTyrGly-87
 105-TyrAspMetArgGlyGluSerIlePhe-113
 117-PheGlnAlaAspAlaSerAspIleTyrArgAspGlyValArgGluSerGlyGlnValArgArgSerThrAla
 AsnIleGluArgValGluIleLeuLysGlyProSer-152
 175-LysGlnSerArgAsn-179
 208-LeuThrGlyGluValGlyArg-214
 220-SerGlyIleAspSerLysAsn-226
 235-ValLysIleAspAsn-239
 251-AsnValGluArgThrProAspArgSerProThr-261
 278-HisArgAsnAspPheValLysAspLysLeuGln-288
 312-ThrAlaAlaGlnAspPhe-317
 324-SerGluAsnGlyAsnLeuIleLys-331
 339-ThrAspAsnLysThrLeu-344
 368-AspTyrSerArgGluHisArgAsnPro-376
 390-ProTyrAspArgAlaSer-395
 409-AsnArgHisLysAlaAspSer-415
 436-GlyArgTyrAspLys-440
 445-SerGluAsnLysLeuThrGlySerSerArgGlnTyrSer-457
 507-AlaAspProGluTyrThrArgGlnTyrGluThrGlyVal-519
 523-TrpLeuAspAspArgLeuSer-529
 544-TyrArgProAspProLysAsn-550
 559-GlyLysHisArgSerArgGlyValGlu-567
 591-LysValValGluAspLysGluAsnProAspArgValGly-603
 634-GlyThrGlyLysArgTyrGlyTyr-641
 643-SerArgAsnLysGluValThr-649
 686-AspSerMetProGlyAsnProArgGlyTyrThr-696
762

AMPHI Regions - AMPHI

1-MetLysTrpLeuLeuAsnMetIleMetArgProlleLysPheSerMetValAsnThrLeuLeuPheIleValIle
 eCysSerSerPhePheAspLeuLeuValGlnLeuCysThrIleLeuPheHisSerGlnLysIleTyrPheIleThr
 LeuPheLeuLeuPheIlePheAsnPheValThrLysSerIleTyrMetAlaIleIleTyrProIleLeuTyrPheP
 heThrIleLysLysTyrTyrProTyrSerArgLysValIleIleLeuLeuSerLeuAlaLeuSerIleTyrPheSe

rPheMetAspPheTyrPhePheSerIleTyrSerAspAsnLeuSerTyrGluThrGluProLeuHisLeuTyrIle
ProIleIleIleAsnPhePheSerLeuLeuValSerAsnPheIleLeuSerPheIleAsnLys-147

Antigenic Index - Jameson-Wolf

1-MetLysTrpLeuLeuAsnMetIleMetArgProIleLysPheSerMetValAsnThrLeuLeuPheIleValIleCysSerSerPhePheAspLeuLeuValGlnLeuCysThrIleLeuPheHisSerGlnLysIleTyrPheIleThrLeuPheLeuLeuPheIlePheAsnPheValThrLysSerIleTyrMetAlaIleIleTyrProIleLeuTyrPhePhThrIleLysLysTyrTyrProTyrSerArgLysValIleLeuLeuSerLeuAlaLeuSerIleTyrPheSerPheMetAspPheTyrPhePheSerIleTyrSerAspAsnLeuSerTyrGluThrGluProLeuHisLeuTyrIleProIleIleIleAsnPhePheSerLeuLeuValSerAsnPheIleLeuSerPheIleAsnLys-147

Hydrophilic Regions - Hopp-Woods

1-MetLysTrpLeuLeuAsnMetIleMetArgProIleLysPheSerMetValAsnThrLeuLeuPheIleValIleCysSerSerPhePheAspLeuLeuValGlnLeuCysThrIleLeuPheHisSerGlnLysIleTyrPheIleThrLeuPheLeuLeuPheAsnPheValThrLysSerIleTyrMetAlaIleIleTyrProIleLeuTyrPhePhThrIleLysLysTyrTyrProTyrSerArgLysValIleLeuLeuSerLeuAlaLeuSerIleTyrPheSerPheMetAspPheTyrPhePheSerIleTyrSerAspAsnLeuSerTyrGluThrGluProLeuHisLeuTyrIleProIleIleIleAsnPhePheSerLeuLeuValSerAsnPheIleLeuSerPheIleAsnLys-147

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AMPHI Regions - AMPHI

1-MetThrLeuLeuAsnLeuMetIleMetGlnAspTyrGlyIleSerValCysLeuThrLeuThrProTyrLeuGlnHisGluLeuPheSerAlaMetLysSerTyrPheSerLysTyrIleIleProValSerLeuPheThrLeuProLeuSerLeuSerProSerValSerAlaPheThrLeuProGluAlaTrpArgAlaAlaGlnGlnHisSerAlaAspPheGlnAlaSerHisTyrGlnArgAspAlaValArgAlaArgGlnGlnLysAlaAlaPheLeuProHisValSerAlaAsnAlaSerTyrGlnArgGlnProProSerIleSerTyrSerThrArgGluThrGlnGlyTrpSerValGlnValGlyGlnThrLeuPheAspAlaAlaLysPheAlaGlnTyrArgGlnSerArgPheAspThrGlnAlaAlaGluGlnArgPheAspAlaAlaArgGluLeuLeuLysValAlaGluSerTyrPheAsnValLeuLeuSerArgPheThrValAlaAlaHisAlaAlaGluLysGluAlaTyrAlaGlnGlnValArgGlnAlaGlnAlaLeuPheAsnLysGlyAlaAlaThrAlaLeuAspIleHisGluAlaIleTyrAspAlaGlyIleTyrAspAsnAlaLeuAlaGlnGluIleAlaValLeuAlaGluLysGlnThrTyrLeuAsnGlnLeuAsnAspTyrThrAspLeuAspSerLysGlnIleGluAlaIleAspThrAlaAsnLeuLeuAlaArgTyrLeuProLeuGluArgTyrSerLeuAspGluTrpGlnArgIleAlaLeuSerAsnAsnHisGluTyrArgMetGlnGlnLeuAlaLeuGlnSerSerGlyGlnAlaLeuArgAlaAlaGlnAsnSerArgTyrProThrValSerAlaHisValGlyTyrGlnAsnAsnLeuTyrThrSerSerAlaGlnAsnAsnAspTyrHiStYrArgGlyLysGlyMetSerValGlyValGlnLeuAsnLeuProLeuTyrThrGlyGlyGluLeuSerGlyIleHisGluAlaGluAlaGlnTyrGlyAlaAlaGluAlaGlnLeuThrAlaThrGluArgHisIleLysLeuAlValArgGlnAlaTyrThrGluSerGlyAlaAlaArgTyrGlnIleMetAlaGlnGluArgValLeuGluSerSerArgLeuLysLeuLysSerThrGluThrGlyGlnTyrGlyIleArgAsnArgLeuGluValIleArgAlaArgGlnGluValAlaGlnAlaGluLysGluAlaGlnIleLeuAlaGlnAlaArgTyrLysPheMetLeuAlaTyrLeuArgLeuValLysGluSerGlyLeuGlyLeuGluThrValPheAlaGlu-467

Antigenic Index - Jameson-Wolf

1-MetThrLeuLeuAsnLeuMetIleMetGlnAspTyrGlyIleSerValCysLeuThrLeuThrProTyrLeuGlnHisGluLeuPheSerAlaMetLysSerTyrPheSerLysTyrIleIleProValSerLeuPheThrLeuProLeuSerLeuSerProSerValSerAlaPheThrLeuProGluAlaTrpArgAlaAlaGlnGlnHisSerAlaAspPheGlnAlaSerHisTyrGlnArgAspAlaValArgAlaArgGlnGlnLysAlaAlaPheLeuProHisValSerAlaAsnAlaSerTyrGlnArgGlnProProSerIleSerTyrArgGluThrGlnGlyTrpSerValGlnValGlyGlnThrLeuPheAspAlaAlaLysPheAlaGlnTyrArgGlnSerArgPheAspThrGlnAlaAlaGluGlnArgPheAspAlaAlaArgGluGluLeuLeuLysValAlaGluSerTyrPheAsnValLeuLeuSerArgPheThrValAlaAlaHisAlaAlaGluLysGluAlaTyrAlaGlnGlnValArgGlnAlaGlnAlaLeuPheAsnLysGlyAlaAlaThrAlaLeuAspIleHisGluAlaIleTyrAspAlaGlyIleTyrAspAsnAlaLeuAlaGlnGluIleAlaValLeuAlaGluLysGlnThrTyrLeuAsnGlnLeuAsnAspTyrThrAspLeuAspSerLysGlnIleGluAlaIleAspThrAlaAsnLeuLeuAlaArgTyrLeuProLysLeuGluArgTyrSerLeuAspGluTrpGlnArgIleAlaLeuSerAsnAsnHisGluTyrArgMetGlnGlnLeuAlaLeuGlnSerSerGlyGlnAlaLeuArgAlaAlaGlnAsnSerArgTyrProThrValSerAlaHisValGlyTyrGlnAsnAsnLeuTyrThrSerSerAlaGlnAsnAsnAspTyrHiStYrArgGlyLysGlyMetSerValGlyValGlnLeuAsnLeuProLeuTyrThrGlyGlyGluLeuSerGlyLys

IleHisGluAlaGluAlaGlnTyrGlyAlaAlaGluAlaGlnLeuThrAlaThrGluArgHisIleLysLeuAlaValArgGlnAlaTyrThrGluSerGlyAlaAlaArgFyrGlnIleMetAlaGlnGluArgValLeuGluSerSerArgLeuLysLeuLysSerThrGluThrGlyGlnGlnTyrGlyIleArgAsnArgLeuGluValIleArgAlaArgGlnGluValAlaGlnAlaGluGlnLysLeuAlaGlnAlaArgTyrLysPheMetLeuAlaTyrLeuArgLeuValLysGluSerGlyLeuGlyLeuGlnThrValPheAlaGlu-467

Hydrophilic Regions - Hopp-Woods

1-MetThrLeuLeuAsnLeuMetIleMetGlnAspTyrGlyIleSerValCysLeuThrLeuThrProTyrLeuGlnHisGluLeuPheSerAlaMetLysSerTyrPheSerLysTyrIleLeuProValSerLeuPheThrLeuProLeuSerLeuSerProSerValSerAlaPheThrLeuProGluAlaTrpArgAlaAlaGlnGlnHisSerAlaAspPheGlnAlaSerHisTyrGlnArgAspAlaValArgAlaArgGlnAlaAlaAlaPheLeuProHisValSerAlaAsnLeaSerTyrGlnGlnProProSerIleSerSerThrArgGluThrGlyLrpSerGlnValGlyGlnThrLeuPheAspAlaAlaLysPheAlaGlnTyrArgGlnSerArgPheAspThrGlnAlaAlaGluGlnArgPheAspAlaAlaArgGluLeuLeuLysValAlaGluSerTyrPheAsnValLeuLeuSerArgAspThrValAlaAlaHisAlaAlaGluLysGluAlaTyrAlaGlnGlnValArgGlnAlaGlnAlaLeuPheAsnLysGlyAlaAlaThrAlaLeuAspIleHisGluAlaLysAlaGlyTyrAspAsnAlaLeuAlaGlnGluIleAlaValLeuAlaGluLysGlnThrTyrGluAsnGlnLeuAsnAspTyrThrAspLeuAspSerLysGlnIleGluAlaAlaLeuAspThrAlaAsnLeuAlaArgTyrLeuProLysLeuGluArgTyrSerLeuAspGluTrpGlnArgIleAlaLeuSerAsnAsnHisGluTyrArgMetGlnGlnLeuAlaLeuGlnSerGlyGlnAlaLeuUrgAlaAlaGlnAsnSerArgTyrProThrValSerAlaHisValGlyIleGlnAsnLeuLeuProLeuTyrThrGlyGlyGluLeuSerGlyLysIleHisGluAlaAlaGlnTyrGlyAlaAlaGluAlaGlnLeuThrAlaThrGluArgHisIleLysLeuAlaValArgGlnAlaTyrThrGluSerGlyAlaAlaArgTyrGlnIleMetAlaGlnGluArgValLeuGluSerSerArgLeuLysLeuLysSerThrGluThrGlyGlnGlnTyrGlyIleArgAsnArgLeuGluValIleArgAlaArgGlnGluValAlaGlnAlaGluGlnLysLeuAlaGlnAlaArgTyrLysPheMetLeuAlaTyrLeuArgLeuValLysGluSerGlyLeuGlyLeuGluThrValPheAlaGlu-467

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AMPHI Regions - AMPHI

1-MetPhePheSerAlaIleLeuLysSerPheLeuSerArgTyrIleThrValTrpArgAsnValTrpAlaValArgAspGlnLeuLysProProLysArgThrAlaGluGlnAlaPheLeuProAlaHisLeuGluLeuThrAspThrProValSerAlaAlaProLysTrpAlaAlaArgPheIleMetAlaPheAlaLeuAlaLeuLeuTrpSerTrpPheGlyLysIleAspIleValAlaAlaAlaSerGlyLysThrValSerGlyGlyArgSerLysThrIleGlnProLeuGluuThrAlaValValLysAlaValHisValArgAspGlyGlnHisValLysGlnGlyGluThrLeuAlaGluLeuGluAlaValGlyThrAspSerAspValValGlySerGlyGlnAlaAlaGlnLeuSerIlysLeuArgTyrGluAlaValLeuAlaLeuAlaLeuGluSerArgThrValProHisIleAspMetAlaGlnAlaArgSerLeuGlyLeuserAspAlaAspValGlnSerAlaGlnValLeuAlaGlnHisGlnTyrGlnAlaTrpAlaAlaGlnAspAlaGlnLeuGlnSerAlaLeuArgGlyHisGlnAlaGluGlnSerAlaLysAlaGlnGlnLysLeuValSerValGlyAlaIleGluGlnGlyLysThrAlaAspTyrArgArgLeuArgAlaAspAsnPhieIleSerGluHisAlaPheLeuGluuGlnGlnSerLysSerValSerAsnTrpAsnAspLeuGluSerThrArgGlyGlnMetArgGlnIleGlnAlaAlaIleAlaGlnAlaGluGlnAsnArgValLeuAsnThrGlnAsnLeuLysArgSpTyrLeuAspAlaLeuArgGlnAlaAsnAspGlyGlnIleAspGlyGlnGlnThrAspLysAlaLysGlnArgGlnGlnLeuMetThrIleGlnSerProAlaAspGlyThrValGlnGluLeuAlaThrTyrThrValGlyGlyValValGlnAlaAlaGlnLysMetMetValleAlaProAspAspAspLysMetAspValGluValLeuValLeuAsnLysAspIleGlyPheValGluGlnGlyGlnAspAlaValValLysIleGluSerPheProTyrThrArgTyrGlyTyrLeuThrGlyLysValLysSerValSerHisAspAlaValSerHisGluGlnLeuGlyLeuValTyrThrAlaAlaValSerLeuAspIlysHisThrLeuAsnIleAspGlyLysAlaValAsnLeuThrAlaGlyMetAsnValThrAlaGluIleLysThrGlyLysArgArgValLeuAspTyrLeuLeuSerProLeuGlnThrLysLeuAspGluSerPheArgGluArg-475

Antigenic Index - Jameson-Wolf

1-MetPhePheSerAlaIleLeuLysSerPheLeuSerArgTyrIleThrValTrpArgAsnValTrpAlaValArgAspGlnLeuLysProProLysArgThrAlaGluGlnAlaPheLeuProAlaHisLeuGluLeuThrAspThrProValSerAlaAlaProLysTrpAlaAlaArgPheIleMetAlaPheAlaLeuAlaLeuLeuTrpSerTrpPheGlyLysIleAspIleValAlaAlaAlaSerGlyLysThrValSerGlyGlyArgSerLysThrIleGlnProLeuGluuThrAlaValValLysAlaValHisValArgAspGlyGlnHisValLysGlnGlyGluThrLeuAlaGluLeuGluAlaValGlyThrAspSerAspValValGlnSerGluGlnAlaAlaLeuClnAlaAlaGlnLeuSerLysLeuArgTyrG

-317-

luAlaValLeuAlaAlaLeuGluSerArgThrValProHisIleAspMetAlaGlnAlaArgSerLeuGlyLeuSerAspValGlnSerAlaGlnValLeuAlaGlnHisGlnTyrGlnAlaTrpAlaAlaGlnAspAlaGlnLeuGlnSerAlaLeuArgGlyHisGlnAlaGluLeuGlnSerAlaLysAlaGlnGluGlnLysLeuValSerValGlyAlaileGluGlnLysThrAlaAspTyrArgArgLeuArgAlaAspAsnPhelleSerGluHisAlaPheLeuGluGlnGlnSerLysSerValSerAsnTrpAsnAspLeuGluSerThrArgGlyGlnMetArgGlnIleGlnAlaAlaIleAlaGlnAlaGluGlnAsnArgValLeuAsnThrGlnAsnLeuLysArgAspThrLeuAspAlaLeuArgGlnAlaAsnGluGlnIleAspGlnTyrArgGlyGlnThrAspLysAlaLysGlnArgGlnLeuMetThrIleGlnSerProAlaAspGlyThrValGlnGluLeuAlaThrTyrThrValGlyGlyValValGlnAlaAlaLysGlnLysMetMetValIleAlaProAspAspLysMetAspValGluValLeuValLeuAsnLysAspIleGlyPheValGluGlnGlyGlnAspAlaValValLysIleGluSerPheProtYrThrArgTyrGlyTyrLeuThrGlyLysValLysSerValSerHisAspAlaValSerHisGluGlnLeuGlyLeuValTyrThrAlaValValSerLeuAspLysHisThrLeuAsnIleAspGlyLysAlaValAsnLeuThrAlaGlyMetAsnValThrAlaGluIleLysThrGlyLysArgArgValLeuAspTyrLeuLeuSerProLeuGlnThrLysLeuAspGluSerPheArgGluArg-475

Hydrophilic Regions - Hopp-Woods

1-MetPhePheSerAlaLeuLysSerPheLeuSerArgTyrIleThrValTrpArgAsnValTrpAlaValArgAspGlnLeuLysProProLysArgThrAlaGluGluGlnAlaPheLeuProAlaHisLeuGluLeuThrAspThrProValSerAlaAlaProLysTrpAlaAlaArgPheMetAlaPheAlaLeuLeuAlaLeuLeuTrpSerTrpPheGlyLysIleAspIleValAlaAlaAlaSerGlyLysThrValSerGlyGlyArgSerLysThrIleGlnProLeuGluuThrAlaValValLysAlaValHisValArgAspGlyGlnHisValLysGlnGlyGluThrLeuAlaGluLeuGluAlaValGlyThrAspSerAspValValGlnSerGluGlnAlaLeuGluSerLysLeuArgTyrGluAlaValLeuAlaLeuGluSerArgThrValProHisIleAspMetAlaGlnAlaArgSerLeuGlyLeuSerAspAlaAspValGlnSerAlaGlnValLeuAlaGlnHisGlnTyrGlnAlaTrpAlaAlaGlnAspAlaGlnLeuGlnSerAlaLeuArgGlyHisGlnAlaGluLeuGlnSerAlaLysAlaGlnGluGlnLysLeuValSerValGlyAlaileGluGlnGlnLysThrAlaAspTyrArgArgLeuArgAlaAspAsnPhelleSerGluHisAlaPheLeuGluuGlnGlnSerLysSerValSerAsnTrpAsnAspLeuGluSerThrArgGlyGlnMetArgGlnIleGlnAlaAlaIleAlaGlnAlaGluGlnAsnArgValLeuAsnThrGlnAsnLeuLysArgAspThrLeuAspAlaLeuArgGlnAlaAsnGluGlnIleAspGlnTyrArgGlyGlnThrAspLysAlaLysGlnArgGlnGlnLeuMetThrIleGlnSerProAlaAspGlyThrValGlnGluLeuAlaThrTyrThrValGlyGlyValValGlnAlaAlaGlnLysMetMetValIleAlaProAspAspLysMetAspValGluValLeuValLeuAsnLysAspIleGlyPheValGluGlnGlyGlnAspAlaValValLysIleGluSerPheProTyrThrArgTyrGlyTyrLeuThrGlyLysValLysSerValSerHisAspAlaValSerHisGluGlnLeuGlyLeuValTyrThrAlaValValSerLeuAspLysHisThrLeuAsnIleAspGlyLysAlaValAsnLeuThrAlaGlyMetAsnValThrAlaGluIleLysThrGlyLysArgArgValLeuAspTyrLeuLeuSerProLeuGlnThrLysLeuAspGluSerPheArgGluArg-475

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AMPHI Regions - AMPHI

36-SerAlaIleSerSerPheCys-42
45-LysIleIleHisThrTyr-50
59-ValIleGlyIleIleAsnGly-65
105-ArgPheLeuAsnArgGly-110
147-PheGlyLeuCysTyrPro-152

Antigenic Index - Jameson-Wolf
10-GlyAsnPheLysLysIleAlaThr-17
19-GlnGlyLeuAspArgLysTyr-25
76-ValLysAsnLysGlnLysPheLeu-83
106-PheLeuAsnArgGlyMetLys-112
132-LeuAsnGluGluGlyGlyTrpMet-139
160-LeuSerArgAspTyrLysHisIle-167

Hydrophilic Regions - Hopp-Woods
11-AsnPheLysLysIleAlaThr-17
19-GlnGlyLeuAspArgLys-24
76-ValLysAsnLysGlnLysPheLeu-83
133-AsnGluGluGlyGly-137

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162-ArgAspTyrLysHis-166

767

AMPHI Regions - AMPHI

1-MetLysLeuLysHisLeuLeuProLeuLeuLeuSerAlaValLeuSerAlaGlnAlaTyrAlaLeuThrGluGlyGluAspTyrLeuValLeuAspLysProIleProGlnGluGlnSerGlyLysIleGluValLeuGluPhePheGlyTyrPheCysValHisCysHisPheAspProLeuLeuLeuLysLeuGlyLysAlaLeuProSerAspAlaTyrLeuArgThrGluHisValValTrpGlnProGluMetLeuGlyLeuAlaArgMetAlaAlaAlaValAsnLeuSerGlyLeuLysTyrGlnAlaAsnProAlaValPheLysAlaValTyrGluGlnLysIleArgLeuGluAsnArgSerValAlaGlyLysTrpAlaLeuSerGlnLysGlyPheAspGlyLysLysLeuMetArgAlaTyrAspSerProGluAlaAlaAlaAlaLeuLysMetGlnLysLeuThrGluGlnTyrArgIleAspSerThrProThrValIleValGlyGlyLysTyrArgValIlePheAsnAsnGlyPheAspGlyGlyValHisThrIleLysGluLeuValAlaLysValArgGluGluArgLysArgGlnThrProAlaValGlnLys-214

Antigenic Index - Jameson-Wolf

1-MetLysLeuLysHisLeuLeuProLeuLeuLeuSerAlaValLeuSerAlaGlnAlaTyrAlaLeuThrGluGlyGluAspTyrLeuValLeuAspLysProIleProGlnGluGlnSerGlyLysIleGluValLeuGluPhePheGlyTyrPheCysValHisCysHisPheAspProLeuLeuLeuLysLeuGlyLysAlaLeuProSerAspAlaTyrLeuArgThrGluHisValValTrpGlnProGluMetLeuGlyLeuAlaArgMetAlaAlaAlaValAsnLeuSerGlyLeuLysTyrGlnAlaAsnProAlaValPheLysAlaValTyrGluGlnLysIleArgLeuGluAsnArgSerValAlaGlyLysTrpAlaLeuSerGlnLysGlyPheAspGlyLysLysLeuMetArgAlaTyrAspSerProGluAlaAlaAlaAlaLeuLysMetGlnLysLeuThrGluGlnTyrArgIleAspSerThrProThrValIleValGlyGlyLysTyrArgValIlePheAsnAsnGlyPheAspGlyGlyValHisThrIleLysGluLeuValAlaLysValArgGluGluArgLysArgGlnThrProAlaValGlnLys-214

Hydrophilic Regions - Hopp-Woods

1-MetLysLeuLysHisLeuLeuProLeuLeuLeuSerAlaValLeuSerAlaGlnAlaTyrAlaLeuThrGluGlyGluAspTyrLeuValLeuAspLysProIleProGlnGluGlnSerGlyLysIleGluValLeuGluPhePheGlyTyrPheCysValHisCysHisPheAspProLeuLeuLeuLysLeuGlyLysAlaLeuProSerAspAlaTyrLeuArgThrGluHisValValTrpGlnProGluMetLeuGlyLeuAlaArgMetAlaAlaAlaValAsnLeuSerGlyLeuLysTyrGlnAlaAsnProAlaValPheLysAlaValTyrGluGlnLysIleArgLeuGluAsnArgSerValAlaGlyLysTrpAlaLeuSerGlnLysGlyPheAspGlyLysLysLeuMetArgAlaTyrAspSerProGluAlaAlaAlaAlaLeuLysMetGlnLysLeuThrGluGlnTyrArgIleAspSerThrProThrValIleValGlyGlyLysTyrArgValIlePheAsnAsnGlyPheAspGlyGlyValHisThrIleLysGluLeuValAlaLysValArgGluGluArgLysArgGlnThrProAlaValGlnLys-214

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AMPHI Regions - AMPHI

23-ProGlnLysProValSerAlaAlaAlaGlnThr-32
60-ProValAspGlnIleValArgArgIleHisGluAlaAla-72
93-LeuGlnGluLeuLysLysAlaGlyTyrThrAsnValAlaAsnHisGly-108

Antigenic Index - Jameson-Wolf

21-AlaAlaProGlnLysProValSer-28
42-ValArgSerGluGlnGluPheSerGluGlyHis-52
63-GlnIleValArgArgIleHisGluAlaAlaProAspLysAspThrPro-78
82-TyrCysArgSerGlyArgArgAlaGluAlaAlaLeuGlnGluLeuLysLysAlaGlyTyr-101
106-AsnHisGlyGlyTyrGluAspLeuLeuLysLysGlyMetLys-119

Hydrophilic Regions - Hopp-Woods

22-AlaProGlnLysProValSer-28
42-ValArgSerGluGlnGluPheSerGlu-50
63-GlnIleValArgArgIleHisGluAlaAlaProAspLysAspThrPro-78
84-ArgSerGlyArgArgAlaGluAlaAlaLeuGlnGluLeuLysLysAlaGly-100
109-GlyTyrGluAspLeuLeuLysLysGlyMetLys-119

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AMPHI Regions - AMPHI

1-LeuIleMetValIlePheTyrPheCysGlyLysThrPheMetProAlaArgAsnArgTrpMetLeuLeuLeuProLeuLeuAlaSerAlaAlaTyrAlaGluGluThrProArgGluProAspLeuArgSerArgProGluPheArgLeuHisGluAlaGluValLysProIleAspArgGluLysValProGlyGlnValArgGluLysGlyLysValLeuGlnIleAspGlyGluThrLeuLeuLysAsnProGluLeuSerArgAlaMetTyrSerAlaValValSerAsnAsnIIeAlaGlyIleArgValIleLeuProIleTyrLeuGlnGlnAlaGlnGlnAspLysMetLeuAlaLeuTyrAlaGlnGlyIleLeuAlaGlnAlaAspGlyArgValLysGluAlaIleSerHisTyrArgGluLeuIleAlaLeaGlnProAspAlaProAlaValArgMetArgLeuAlaAlaLeuPheGluAsnArgGlnAsnGluAlaAlaAlaAspGlnPhAspArgLeuLysAlaGluAsnLeuProProGlnLeuMetGluGlnValGluLeuTyrArgLysAlaLeuArgGluArgAspAlaTrpLysValAsnGlyGlyPheSerValThrArgGluHisAsnIleAsnGlnIlaProLysArgGlnGlnTyrGlyLysTrpThrPheProLysGlnValAspGlyThrAlaValAsnTyrArgLeuGlyAlaGluLysLysTrpSerLeuLysAsnGlyTrpTyrThrThrAlaGlyGlyAspValSerGlyArgValTyrProGlyArgProGlyValAsnLysPheAsnAspMetThrAlaGlyValSerGlyIleGlyArgValIleLeuIleAlaLeuTyrAlaGlnProAspAlaProAlaValArgMetArgLeuAlaAlaLeuPheGluAsnArgGlnAsnGluAlaAlaAlaAspGlnPhAspArgLeuLysAlaGluAsnLeuProProGlnLeuMetGluGlnValGluLeuTyrArgLysAlaLeuArgGluArgAspAlaTrpLysValAsnGlyGlyPheSerValThrArgGluHisAsnIleAsnGlnIlaProLysArgGlnGlnTyrGlyLysTrpThrPheProLysGlnValAspGlyThrAlaValAsnTyrArgLeuGlyAlaGluLysLysTrpSerLeuLysAsnGlyTrpTyrThrThrAlaGlyGlyAspValSerGlyArgValTyrProGlyArgProGlyValAsnLysPheAsnAspMetThrAlaGlyValSerGlyIleGlyAspAlaAspArgArgLysAspAlaGlyLeuAlaValPhe-490

Antigenic Index - Jameson-Wolf

1-LeuIleMetValIlePheTyrPheCysGlyLysThrPheMetProAlaArgAsnArgTrpMetLeuLeuLeuProLeuLeuAlaSerAlaAlaTyrAlaGluGluThrProArgGluProAspLeuArgSerArgProGluPheArgLeuHisGluAlaGluValLysProIleAspArgGluLysValProGlyGlnValArgGluLysGlyLysValLeuGlnIleAspGlyGluThrLeuLeuLysAsnProGluLeuLeuSerArgAlaMetTyrSerAlaValValSerAsnAsnIIeAlaGlyIleArgValIleLeuProIleTyrLeuGlnGlnAlaGlnGlnAspLysMetLeuAlaLeuTyrAlaGlnGlyIleLeuAlaGlnAlaAspGlyArgValIleLeuIleAlaIleSerHisTyrArgGluLeuIleAlaLeaGlnProAspAlaProAlaValArgMetArgLeuAlaAlaLeuPheGluAsnArgGlnAsnGluAlaAlaAlaAspGlnPhAspArgLeuLysAlaGluAsnLeuProProGlnLeuMetGluGlnValGluLeuTyrArgLysAlaLeuArgGluArgAspAlaTrpLysValAsnGlyGlyPheSerValThrArgGluHisAsnIleAsnGlnIlaProLysArgGlnGlnTyrGlyLysTrpThrPheProLysGlnValAspGlyThrAlaValAsnTyrArgLeuGlyAlaGluLysLysTrpSerLeuLysAsnGlyTrpTyrThrThrAlaGlyGlyAspValSerGlyArgValTyrProGlyAsnLysLysPheAsnAspMetThrAlaGlyValSerGlyIleGlyAspAlaAspArgArgLysAspAlaGlyLeuAlaValPheHisGluArgArgThrTyrGlyAsnAspAlaTyrSerTyrThrAsnGlyAlaArgLeuTyrPheAsnArgTrpGlnThrProLysTrpGlnThrLeuSerSerAlaGluTrpGlyArgLeuLysAsnThrArgArgAlaArgSerAspAsnThrHisLeuGlnIleSerAsnSerLeuValPheTyrArgAsnAlaArgGlnTyrTrpMetGlyGlyLeuAspPheTyrArgGluArgAspAlaAspArgAspPheAsnArgTyrGlyLeuArgPheAlaTrpGlyGlnGluGlnTrpGlyIleGlySerGlyLeuSerSerLeuLeuArgLeuGlyAlaAlaLysArgHisTyrGluLysProGlyPhePheSerGlyPhelysGlyGluArgArgArgAspLysGluLeuAsnThrSerLeuSerLeuTrpHisArgAlaLeuHisPheLysGlyIleThrProArgLeuThrLeuSerHisArgGluThrArgSerAsnAspValPheAsnGluTyrGluLysAsnArgAlaPheValGluPheAsnLysThrPhe-490

Hydrophilic Regions - Hopp-Woods

1-LeuIleMetValIlePheTyrPheCysGlyLysThrPheMetProAlaArgAsnArgTrpMetLeuLeuLeuProLeuLeuAlaSerAlaAlaTyrAlaGluGluThrProArgGluProAspLeuArgSerArgProGluPheArgLeuHisGluAlaGluValLysProIleAspArgGluLysValProGlyGlnValArgGluLysGlyLysValLeuGlnIleAspGlyGluThrLeuLeuLysAsnProGluLeuLeuSerArgAlaMetTyrSerAlaValValSerAsnAsnIIeAlaGlyIleArgValIleLeuProIleTyrLeuGlnGlnAlaGlnGlnAspLysMetLeuAlaLeuTyrAlaGlnGlyIleLeuAlaGlnAlaAspGlyArgValLysGluAlaIleSerHisTyrArgGluLeuIleAlaAlaGlnProAspAlaProAlaValArgMetArgLeuAlaAlaLeuPheGluAsnArgGlnAsnGluAlaAlaAlaAspGlnPhAspArgLeuLysAlaGluAsnLeuProProGlnLeuMetGluGlnValGluLeuTyrArgLysAlaLeuArgGluArgAspAlaTrpLysValAsnGlyGlyPheSerValThrArgGluHisAsnIleAsnGlnIlaProLysArgGlnGlnTyrGlyLysTrpThrPheProLysGlnValAspGlyThrAlaValAsnTyrArgLeuGlyAlaGluLysLysTrpSerLeuLysAsnGlyTrpTyrThrThrAlaGlyGlyAspValSerGlyArgValTyrProGlyAsnLysPheAsnAspMetThrAlaGlyValSerGlyIleGlyAspAlaAspArgArgLysAspAlaGlyLeuAlaValPheH

isGluArgArgThrTyrGlyAsnAspAlaTyrSerTyrThrAsnGlyAlaArgLeuTyrPheAsnArgTrpGlnThrProLysTrpGlnThrLeuSerSerAlaGluTrpGlyArgLeuLysAsnThrArgArgAlaArgSerAspAsnThrHisLeuGlnIleSerAsnSerLeuValPheTyrArgAsnAlaArgGlnTyrTrpMetGlyGlyLeuAspPheTyrArgGluArgAsnProAlaAspArgGlyAspAsnAspPheAsnArgTyrGlyLeuArgPheAlaTrpGlyGlnGluTrpGlyGluArgSerSerLeuLeuArgLeuGlyAlaAlaLysArgHisTyrGluLysProGlyPhePheSerGlyPhelysGlyGluArgArgAspLysGluLeuAsnThrSerLeuSerLeuTrpHisArgAlaLeuHisPheLysGlyIleThrProArgLeuThrLeuSerHisArgGluThrArgSerAsnAspValPheAsnGluGluTyrGluLysAsnArgAlaPheValGluPheAsnLysThrPhe-490

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AMPHI Regions - AMPHI

1-MetAsnArgLeuLeuLeuLeuSerAlaAlaValLeuLeuThrAlaCysGlySerGlyGluThrAspLysIleGlyArgAlaSerThrValPheAsnIleLeuGlyLysAsnAspArgIleGluValGluGlyPheAspAspProAspValGlnGlyValAlaCysTyrIleSerTyrAlaLysLysGlyGlyLeuLysGluMetValAsnLeuGluAspAlaSerAspAlaSerValSerCysValGlnThrAlaSerSerIleSerPheAspGluThrAlaValArgLysProLysGluValPheLysHisGlyAlaSerPheAlaPheLysSerArgGlnIleValArgTyrTyrAspProLysArgLysThrPheAlaTyrLeuValTyrSerAspLysIleIleGlnGlySerProLysAsnSerLeuSerAlaValSerCysPheGlyGlyGlyIleProGlnThrAspGlyValGlnAlaAspThrSerGlyAsnLeuLeuAlaGlyAlaCysMetIleSerAsnProIleGluAsnLeuAspLysArg-186

Antigenic Index - Jameson-Wolf

1-MetAsnArgLeuLeuLeuLeuSerAlaAlaValLeuLeuThrAlaCysGlySerGlyGluThrAspLysIleGlyArgAlaSerThrValPheAsnIleLeuGlyLysAsnAspArgIleGluValGluGlyPheAspAspProAspValGlnGlyValAlaCysTyrIleSerTyrAlaLysLysGlyGlyLeuLysGluMetValAsnLeuGluAspAlaSerAspAlaSerValSerCysValGlnThrAlaSerSerIleSerPheAspGluThrAlaValArgLysProLysGluValPheLysHisGlyAlaSerPheAlaPheLysSerArgGlnIleValArgTyrTyrAspProLysArgLysThrPheAlaTyrLeuValTyrSerAspLysIleIleGlnGlySerProLysAsnSerLeuSerAlaValSerCysPheGlyGlyGlyIleProGlnThrAspGlyValGlnAlaAspThrSerGlyAsnLeuLeuAlaGlyAlaCysMetIleSerAsnProIleGluAsnLeuAspLysArg-186

Hydrophilic Regions - Hopp-Woods

1-MetAsnArgLeuLeuLeuLeuSerAlaAlaValLeuLeuThrAlaCysGlySerGlyGluThrAspLysIleGlyArgAlaSerThrValPheAsnIleLeuGlyLysAsnAspArgIleGluValGluGlyPheAspAspProAspValGlnGlyValAlaCysTyrIleSerTyrAlaLysLysGlyGlyLeuLysGluMetValAsnLeuGluAspAlaSerAspAlaSerValSerCysValGlnThrAlaSerSerIleSerPheAspGluThrAlaValArgLysProLysGluValPheLysHisGlyAlaSerPheAlaPheLysSerArgGlnIleValArgTyrTyrAspProLysArgLysThrPheAlaTyrLeuValTyrSerAspLysIleIleGlnGlySerProLysAsnSerLeuSerAlaValSerCysPheGlyGlyGlyIleProGlnThrAspGlyValGlnAlaAspThrSerGlyAsnLeuLeuAlaGlyAlaCysMetIleSerAsnProIleGluAsnLeuAspLysArg-186

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AMPHI Regions - AMPHI

1-MetAspLeuLeuSerThrPheHisLysTyrArgLeuLysTyrAlaValAlaValLeuLeuThrIleLeuLeuAlaAlaValGlyLeuHisAlaSerValTyrArgThrPheThrProGluAsnIleArgSerArgLeuGlnGlnSerIleAlaHistThrHisArgLysIleSerPheAspAlaAspIleGlnArgLeuLeuProArgProThrValIleLeuLysAsnLeuThrIleThrGluProGlyGlyAspGlnThrAlaValSerValGlnGluThrLysIleGlyLeuSerTrpLysAsnLeuTrpSerAspGlnIleGlnIleGluLysTrpValValSerSerAlaGluLeuAlaLeuThrArgAspGlyLysGlyValTrpAsnIleGlnAspLeuIleAspSerGlnLysArgGlnAlaSerValAsnArgIleIleValGluAsnSerThrValArgLeuAsnPheLeuGlnGluGlnLeuIleLeuLysGluIleAsnLeuGlnSerPrcAspSerSerGlyGlnProPheGluSerSerGlyIleLeuValTrpGlyGlyLysLeuSerValProTrpLysSerArgGlyLeuPheLeuSerAsnGlyIleGlyProProGluIleSerProPheHisPheGluAlaSerThrSerLeuAspGlyHisGlyIleThrIleSerThrThrGlySerProSerValArgPheAsnAlaGlyGlyAlaAspAlaAlaGlyLeuGlyLeuArgAlaAspThrSerPheArgAsnLeuHisIleLeuThrAlaGlnIleProAlaLeuAlaLeuArgAsnSerIleLysIleGluThrValAsnGlyAlaPheThrAlaGlyGlyGluTyrAlaArgTrpAspGlySerPheLysLeuAspLysAlaAsnLeuHisSerGlyIleAlaAsnIleGlyAsnAlaGluIleSerGlySerPheLysThrProArgGlyHisGlnThrAsnPheSerLeuAsnSerProLeuValTrpThrGluAsnLysGlyLeuAspAlaProArgLeuTyrValSerThrLeuGlnAspThrValAsnArgLeuProGlnProArgPheIleSerArgLeuAspGlySerLeuSerV

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alProAsnLeuGlnAsnTrpAsnAlaGluLeuAsnGlyThrPheAspArgGlnThrValAlaAlaLysPheArgTy
rThrHisGluAspAlaProHisLeuGluAlaAlaValAlaLeuGlnLysLeuAsnLeuThrProTyrLeuAspAsp
ValArgGlnGlnAsnGlyLysIlePheProAspThrLeuAlaLysLeuSerGlyAspIleGluAlaHisLeuLysI
leGlyLysValGlnLeuProGlyLeuGlnLeuAspAspMetGluThrTyrLeuHisAlaAspLysGlyHisIleAl
aLeuSerArgPhelysSerGlyLeuTyrGlyGlyHisThrGluGlyGlyIleSerIleAlaAsnThrArgProAla
ThrTyrArgLeuGlnAsnAlaSerAsnIleGlnIleGlnProLeuLeuGlnAspLeuPheGlyPheHisSerP
heSerGlyAsnGlyAspAlaValIleAspLeuThrAlaGlyGlyGluThrArgLysGluLeuIleArgSerLeuG
nGlySerLeuSerLeuAsnIleSerAsnGlyAlaTrpHisGlyIleAspMetAspAsnIleLeuLysasnGlyIle
SerGlyLysThrAlaAspAsnAlaAlaProSerThrProPheHisArgPheThrLeuAsnSerGluLeSerAspG
lyIleSerArgHisIleAspThrGluLeuPheSerAspSerLeuTyrValThrSerAsnGlyTyrThrAsnLeuAs
pThrGlnGluLeuSerGluAspValLeuIleArgAsnAlaValHisProValLysProLysProLeuLysProLeuLys
ThrGlyThrValAspLysProSerIleThrValAspTyrGlyArgLeuThrGlyGlyIleAsnSerArgLysGluL
ysGlnLysIleLeuGluAspThrLeuLeuGlnTrpGlnTrpLeuLysProLysGluProAla-705

Antigenic Index - Jameson-Wolf

1-MetAspLeuLeuSerValPheHisLysTyrArgLeuLysTyrAlaValAlaValLeuThrIleLeuLeuLeuAl
aAlaValGlyLeuHisAlaSerValTyrArgThrPheThrProGluAsnIleArgSerArgLeuGlnGlnSerIle
AlaHisThrHisArgLysIleSerPheAspAlaAspIleGlnArgArgLeuLeuProArgProThrValIleLeuL
ysAsnLeuThrIleThrGluProGlyGlyAspGlnThrAlaValSerValGlnGluThrLysIleGlyLeuSerT
pLysAsnLeuTrpSerAspGlnIleGlnIleGluLysTrpValValSerSerAlaGluLeuIleLeuThrArgAsp
GlyLysValTrpAsnIleGlnAspLeuIleAspSerGlnLysArgGlnAlaSerValAsnArgIleIleValG
luAsnSerThrValArgLeuAsnPheLeuGlnGluIleLeuLeuLysGluIleAsnLeuAsnLeuGlnSerPr
oAspSerSerGlyGlnProPheGluSerSerGlyIleLeuValTrpGlyLysLeuSerValProTrpLysSerArg
GlyLeuPheLeuSerAsnGlyIleGlyProGluIleSerProPheHisPheGluAlaSerThrSerLeuAspG
lyHisGlyIleThrIleSerThrGlySerProSerValArgPheAsnAlaGlyGlyAlaAspAlaAlaGlyLe
uGlyLeuArgAlaAspThrSerPheArgAsnLeuHisLeuThrAlaGlnIleProAlaLeuAlaLeuArgAsnAsn
SerIleLysIleGluThrValAsnGlyAlaPheThrAlaGlyGlyGluTyrAlaArgTrpAspGlySerPheLysL
euAspLysAlaAsnLeuHisSerGlyIleAlaAsnIleGluIleSerGlySerPheLysThrProAr
gHisGlnThrAsnPheSerLeuAsnSerProLeuValTrpThrGluAsnLysGlyLeuAspAlaProArgLeuTyr
ValSerThrLeuGlnAspThrValAsnArgLeuProGlnProArgPheIleSerArgLeuAspGlySerLeuSerV
alProAsnLeuGlnAsnTrpAsnAlaGluLeuGlnGlyThrPheAspArgGlnThrValAlaAlaLysPheArgTy
rThrHisGluAspAlaProHisLeuGluAlaAlaValAlaLeuGlnLysLeuAsnLeuThrProTyrLeuAspAsp
ValArgGlnGlnAsnGlyLysIlePheProAspThrLeuAlaLysLeuSerGlyAspIleGluAlaHisLeuLysI
leGlyLysValGlnLeuProGlyLeuGlnLeuAspAspMetGluThrTyrLeuHisAlaAspLysGlyHisIleAl
aLeuSerArgPhelysSerGlyLeuTyrGlyGlyHisThrGluGlyGlyIleSerIleAlaAsnThrArgProAla
ThrTyrArgLeuGlnAsnAlaSerAsnIleGlnIleGlnProLeuLeuGlnAspLeuPheGlyPheHisSerP
heSerGlyAsnGlyAspAlaValIleAspLeuThrAlaGlyGlyGluThrArgLysGluLeuIleArgSerLeuG
nGlySerLeuSerLeuAsnGlyAlaTrpHisGlyIleAspMetAspAsnIleLeuLysAsnGlyIle
SerGlyLysThrAlaAspAsnAlaAlaProSerThrProPheHisArgPheThrLeuAsnSerGluIleSerAspG
lyIleSerArgHisIleAspThrGluLeuPheSerAspSerLeuTyrValThrSerAsnGlyTyrThrAsnLeuAs
pThrGlnGluLeuSerGluAspValLeuIleArgAsnAlaValHisProValLysProLysProLeuLysProLeuLys
ThrGlyThrValAspLysProSerIleThrValAspTyrGlyArgLeuThrGlyGlyIleAsnSerArgLysGluL
ysGlnLysIleLeuGluAspThrLeuLeuGlnTrpGlnTrpLeuLysProLysGluProAla-705

Hydrophilic Regions - Hopp-Woods

1-MetAspLeuLeuSerValPheHisLysTyrArgLeuLysTyrAlaValAlaValLeuThrIleLeuLeuLeuAl
aAlaValGlyLeuHisAlaSerValTyrArgThrPheThrProGluAsnIleArgSerArgLeuGlnGlnSerIle
AlaHisThrHisArgLysIleSerPheAspAlaAspIleGlnArgArgLeuLeuProArgProThrValIleLeuL
ysAsnLeuThrIleThrGluProGlyGlyAspGlnThrAlaValSerValGlnGluThrLysIleGlyLeuSerT
pLysAsnLeuTrpSerAspGlnIleGlnIleGluLysTrpValValSerSerAlaGluLeuIleLeuThrArgAsp
GlyLysGlyValTrpAsnIleGlnAspLeuIleAspSerGlnLysArgGlnIlaSerValAsnArgIleIleValG
luAsnSerThrValArgLeuAsnPheLeuGlnGluIleLeuLeuLysGluIleAsnLeuAsnLeuGlnSerPr
oAspSerSerGlyGlnProPheGluSerSerGlyIleLeuValTrpGlyLysLeuSerValProTrpLysSerArg
GlyLeuPheLeuSerAsnGlyIleGlyProProGluIleSerProPheHisPheGluAlaSerThrSerLeuAspG
lyHisGlyIleThrIleSerThrGlySerProSerValArgPheAsnAlaGlyGlyAspAlaAlaGlyLe

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uGlyLeuArgAlaAspThrSerPheArgAsnLeuHisLeuThrAlaGlnIleProAlaLeuAlaLeuArgAsnAsnSerIleLysIleGluThrValAsnGlyAlaPheThrAlaGlyGlyGluTyrAlaArgTrpAspGlySerPheLysLeuAspLysAlaAsnLeuHisSerGlyIleAlaAsnIleGlyAsnAlaGluIleSerGlySerPheLysThrProArgHisGlnThrAsnPheserLeuAsnSerProLeuValTrpThrGluAsnLysGlyLeuAspAlaProArgLeuTyrValSerThrLeuGlnAspThrValAsnArgLeuProGlnProArgPheIleSerArgLeuAspGlySerLeuSerValProAsnLeuGlnAsnTrpAsnAlaGluLeuAsnGlyThrPheAspArgGlnThrValAlaAlaLysPheArgTyrrThrHisGluAspAlaProHistLeuGluAlaValAlaLeuGlnLysLeuAsnLeuThrProTyrLeuAspAspValArgGlnAsnGlyLysIlePheProAspThrLeuAlaLysLeuSerGlyAspIleGluAlaHisLeuLysIleGlyLysValGlnLeuProGlyLeuGlnLeuAspAspMetGluThrTyrLeuHisAlaAspLysGlyHisIleAlaleuSerArgPheIysSerGlyLeuTyrGlyHisThrGluGlyGlyIleSerIleAlaAsnThrArgProAlaThrTyrArgLeuGlnGlnAlaSerGlyGlnIleGlnProLeuLeuGlnAspLeuPheGlyHisSerPheSerGlyAsnGlyAspAlaValIleAspLeuThrAlaGlyGlyLeuThrArglysGluLeuIleArgSerLeuGlnGlySerLeuSerLeuAsnIleSerAsnGlyAlaTrpHisGlyIleAspMetAspAsnIleLeuLysAsnGlyIleSerGlyLysThrAlaAspAsnAlaAlaProSerThrProPheHisArgPheThrLeuAsnSerGluLeuSerGlyIleSerArgHisIleAspPheSerLeuPheSerAspSerLeuTyrValThrSerAsnGlyTyrThrAsnLeuAspThrGlnGluLeuSerGluAspValLeuIleArgAsnAlaValHisProLysAsnLysProIleProLeuLysIleThrGlyThrValAspLysProSerIleThrValAspTyrGlyArgLeuThrGlyGlyIleAsnSerArgLysGluLyglnLysIleLeuGluAspThrLeuLeuGluGlnTrpGlnTrpLeuLysProLysGluProAla-705

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AMPHI Regions - AMPHI

1-MetPheGlyAlaValLeuArgIleAspAlaAspCysLeuGlnIleIleValAlaCysLysLeuPheGlnIleValAlaTyrGlyPheAlaAlaLeuValGluGlyGluPheHisGluPheGlyLysMetLeuGluIleValArgLeuAlaAspAlaValPheHisArgAsnHisThrAspAspGlyGlyIleHisPheArgArgArgValGluArgPheGlyArgTyrrValAsnGlnHisPheHisIleGluLysIleLeuGlnHisAlaGlnAlaValValValAlaPheArgArgGlyAsnHisThrLeuAspHisPheLeuGlnHisIleAspIleAspIleValArgHisLeuGlnLeuGluGlnLysArgCysGlyAsnValValArgGluValAlaAspAspPheLeuPheAlaCysAspAlaValGluIleLeuLeuGlnTyrIleAlaPheValAsnHisGlnPheIleArglysArgGlnArgPheGlnThrAlaTyrAspValAlaValAspPheAspAsnValGlnAlaValGlnLeuPheArgGlnArgPheGlyAsnArgArgGlnThrArgAlaAspPheAsnHisAspIleIleArgLeuArgAlaHisGlyValAspAsnIleAlaAspAsnProArgValLeuGlnLysIleLeuProGluThrLeuAlaGlyPheValPhePheHisArgValSerPheSerValGluThrProProPheArgAlaValGluSerAspSerIleTrpGluGlyArgAsnSerPheGlnIleArgMetAlaHisArgAlaValLeuTyrValSerSerCysValLeuLysHisLysCysValTyrSerIleArgLeuMetSerAlaLeu-298

Antigenic Index - Jameson-Wolf

1-MetPheGlyAlaValLeuArgIleAspAlaAspCysLeuGlnIleIleValAlaCysLysLeuPheGlnIleValAlaTyrGlyPheAlaAlaLeuValGluGlyGluPheHisGluPheGlyLysMetLeuGluIleValArgLeuAlaAspAlaValPheHisArgAsnHisThrAspAspGlyGlyIleHisPheArgArgArgValGluArgPheGlyArgTyrrValAsnGlnHisPheHisIleGluLysIleLeuGlnHisAlaGlnAlaValValValAlaPheArgArgGlyAsnHisThrLeuAspHisPheLeuGlnHisIleAspIleAspIleValArgHisLeuArgGlnLeuGluGlnLysArgCysGlyAsnValValArgGluValAlaAspAspPheLeuPheAlaCysAspAlaValGluIleLeuLeuGlnTyrIleAlaPheValAsnHisGlnPheIleArglysArgGlnArgPheGlnThrAlaTyrAspValAlaValAspPheAspAsnValGlnAlaValGlnLeuPheArgGlnArgPheGlyAsnArgArgGlnThrArgAlaAspPheAsnHisAspIleIleArgLeuArgAlaHisGlyValAspAsnIleAlaAspAsnProArgValLeuGlnLysIleLeuProGluThrLeuAlaGlyPheValPhePheHisArgValSerPheSerValGluThrProProPheArgAlaValGluSerAspSerIleTrpGluGlyArgAsnSerPheGlnIleArgMetAlaHisArgAlaValLeuTyrValSerSerCysValLeuLysHisLysCysValTyrSerIleArgLeuMetSerAlaLeu-298

Hydrophilic Regions - Hopp-Woods

1-MetPheGlyAlaValLeuArgIleAspAlaAspCysLeuGlnIleIleValAlaCysLysLeuPheGlnIleValAlaTyrGlyPheAlaAlaLeuValGluGlyGluPheHisGluPheGlyLysMetLeuGluIleValArgLeuAlaAspAlaValPheHisArgAsnHisThrAspAspGlyGlyIleHisPheArgArgArgValGluArgPheGlyArgTyrrValAsnGlnHisPheHisIleGluLysIleLeuGlnHisAlaGlnAlaValValValAlaPheArgArgGlyAsnHisThrLeuAspHisPhePheLeuGlnHisIleAspIleAspIleValArgHisLeuArgGlnLeuGluGlnLysArgCysGlyAsnValValArgGluValAlaAspAspPheLeuPheAlaCysAspAlaValGluIleLysLeuGlnTyrIleAlaPheValAsnHisGlnPheIleArglysArgGlnArgPheGlnThrAlaTyrAspVal

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1 Ala Val Asp Phe Asp Asn Val Gln Ala Val Gln Leu Phe Arg Gln Arg Phe Gly Asn Arg Arg Gln Thr Arg Ala Asp Phe Asn His Asp Ile Ile Arg Leu Arg Ala His Gly Val Asp Asn Ile Ala Asp Asn Pro Arg Val Leu Gln Lys Ile Leu Pro Glu Thr Leu Ala Gly Phe Val Phe he His Arg Val Ser Phe Ser Val Glu Thr Pro Pro Phe Arg Ala Val Glu Ser Asp Ser Ile Trp Glu Gly Arg Asn Ser Phe Gln Ile Arg Met Ala His Arg Ala Val Leu Tyr Val Ser Ser Cys Val Leu Lys His Lys Cys Val Tyr Ser Ile Arg Leu Met Ser Ala Leu - 298
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AMPHI Regions - AMPHI

1-Met Gly Leu Gly Ala Thr Thr Phe Val Gly Ser Gly Ala Ile Gly Gly Leu Cys Ser Thr Gly Ile Gly Cys Ala Ala Gly Gly Leu Ile Ala Thra Ala Gly Met Thr Gly Gly Tyr Thr Gln Ala Ser Glu Gly Ser Arg Gln Leu Phe Gly Thr Tyr Gln Ser Asp Phe Gly Lys Lys Val Val Leu Ser Leu Gly Thr Pro Ile Glu Tyr Glu Ser Pro L eu Val Ser Asp Ala Asn Leu Ala Val Trp Gly Leu Glu Thr Leu Ile Thr Arg Lys Leu Gly Asn Leu Ala Thr Gly Val Lys Thr Ser Leu Thr Pro Lys Thr Ala Asp Val Gln Arg Asn Ile Leu Ser Gln Ser Glu Val Gly Ile Lys Trp Gly Lys Gly Ile Glu Gly Gln Gly Met Pro Trp Glu Asp Tyr Val Gly Lys Gly Leu Ser Ala Asn Ala Arg Leu Pro Lys Asn Phe Lys Thr Phe Asp Tyr Phe Asp Arg Gly Thr Gly Thra Ala Ile Ser Ala Lys Thr Leu As p Thr Gln Thr Thra Ala Arg Leu Ser Lys Pro Glu Gln Leu Tyr Ser Thr Met Lys Gly Tyr Ile Asp Lys Thr Ala Asn Phe Lys Ser Tyr Glu Leu Ser Glu Val Pro Leu Arg Ala Asp Met Ile Lys Gln Arg Glu Ile His Leu Ala I le Pro Ala Gln Thr Asn Lys Glu Gln Arg Leu Gln Leu Gln Arg Val Val Glu Tyr Gly Lys Ser Gln Asn Ile Th r Val Lys Ile Thr Glu Ile Glu - 260

Antigenic Index - Jameson-Wolf

1-Met Gly Leu Gly Ala Thr Thr Phe Val Gly Ser Gly Ala Ile Gly Gly Leu Cys Ser Thr Gly Ile Gly Cys Ala Ala Gly Gly Leu Ile Ala Thra Ala Gly Met Thr Gly Gly Tyr Thr Gln Ala Ser Glu Gly Ser Arg Gln Leu Phe Gly Thr Tyr Gln Ser Asp Phe Gly Lys Lys Val Val Leu Ser Leu Gly Thr Pro Ile Glu Tyr Glu Ser Pro L eu Val Ser Asp Ala Asn Leu Ala Val Trp Gly Leu Glu Thr Leu Ile Thr Arg Lys Leu Gly Asn Leu Ala Thr Gly Val Lys Thr Ser Leu Thr Pro Lys Thr Ala Asp Val Gln Arg Asn Ile Leu Ser Gln Ser Glu Val Gly Ile Lys Trp Gly Lys Gly Ile Glu Gly Gln Gly Met Pro Trp Glu Asp Tyr Val Gly Lys Gly Leu Ser Ala Asn Ala Arg Leu Pro Lys Asn Phe Lys Thr Phe Asp Tyr Phe Asp Arg Gly Thr Gly Thra Ala Ile Ser Ala Lys Thr Leu As p Thr Gln Thr Thra Ala Arg Leu Ser Lys Pro Glu Gln Leu Tyr Ser Thr Met Lys Gly Tyr Ile Asp Lys Thr Ala Asn Phe Lys Ser Tyr Glu Leu Ser Glu Val Pro Leu Arg Ala Asp Met Ile Lys Gln Arg Glu Ile His Leu Ala I le Pro Ala Gln Thr Asn Lys Glu Gln Arg Leu Gln Leu Gln Arg Val Val Glu Tyr Gly Lys Ser Gln Asn Ile Th r Val Lys Ile Thr Glu Ile Glu - 260

Hydrophilic Regions - Hopp-Woods

1-Met Gly Leu Gly Ala Thr Thr Phe Val Ser Gly Ala Ile Gly Gly Leu Cys Ser Thr Gly Ile Gly Cys Ala Ala Gly Gly Leu Ile Ala Thra Ala Gly Met Thr Gly Gly Tyr Thr Gln Ala Ser Glu Gly Ser Arg Gln Leu Phe Gly Thr Tyr Gln Ser Asp Phe Gly Lys Lys Val Val Leu Ser Leu Gly Thr Pro Ile Glu Tyr Glu Ser Pro L eu Val Ser Asp Ala Asn Leu Ala Val Trp Gly Leu Glu Thr Leu Ile Thr Arg Lys Leu Gly Asn Leu Ala Thr Gly Val Lys Thr Ser Leu Thr Pro Lys Thr Ala Asp Val Gln Arg Asn Ile Leu Ser Gln Ser Glu Val Gly Ile Lys Trp Gly Lys Gly Ile Glu Gly Gln Gly Met Pro Trp Glu Asp Tyr Val Gly Lys Gly Leu Ser Ala Asn Ala Arg Leu Pro Lys Asn Phe Lys Thr Phe Asp Tyr Phe Asp Arg Gly Thr Gly Thra Ala Ile Ser Ala Lys Thr Leu As p Thr Gln Thr Thra Ala Arg Leu Ser Lys Pro Glu Gln Leu Tyr Ser Thr Met Lys Gly Tyr Ile Asp Lys Thr Ala Asn Phe Lys Ser Tyr Glu Leu Ser Glu Val Pro Leu Arg Ala Asp Met Ile Lys Gln Arg Glu Ile His Leu Ala I le Pro Ala Gln Thr Asn Lys Glu Gln Arg Leu Gln Leu Gln Arg Val Val Glu Tyr Gly Lys Ser Gln Asn Ile Th r Val Lys Ile Thr Glu Ile Glu - 260

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1-Met Lys Ile Lys Leu Pro Leu Phe Ile Ile Trp Leu Ser Val Ser Ala Ser Cys Ala Ser Val Ser Pro Val Pro Ala Gly Ser Gln Thr Glu Met Ser Thr Arg Glu Asn Ala Ser Asp Gly Ile Pro Tyr Pro Val Pro Thr Leu Gln Asp Arg Leu Asp Tyr Leu Glu Gly Lys Ile Val Arg Leu Ser Asn Glu Val Glu Thr Leu Asn Gly Lys Val Lys A la Leu Glu His Alan Lys Thr His Ser Gly Arg Ala Tyro Val Glu Lys Leu Asp Asp Arg Arg Lys Leu Lys Glu His Tyr Leu Asn Thr Glu Gly Ser Ala Ser Ala His Thr Val Glu Thr Ala Glu Asn Leu Tyr Asn Glu Ile Leu Lys His Tyr Lys Ser Gly Lys Phe Ser Ala Ala Ala Ser Leu Leu Lys Gly Ala Asp Gly Gly Asp Gly Gly Ser I le Ala Gln Arg Ser Met Tyr Leu Leu Leu Gln Ser Arg Ala Arg Met Gly Asn Cys Glu Ser Val Ile Glu Ile Glu Gly Arg Tyr Ala Asn Arg Phe Lys Asp Ser Pro Thr Ala Pro Glu Ala Met Phe Lys Ile Gly Glu Cys Glu Tyr

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ArgLeuGlnGlnLysAspIleAlaArgAlaThrTrpArgSerLeuIleGlnThrTyrProGlySerProAlaAlaLysArgAlaAlaAlaValArgLysArg-237

Antigenic Index - Jameson-Wolf

1-MetLysIleLysLeuProLeuPheIleIleTrpLeuSerValSerAlaSerCysAlaSerValSerProValProAlaGlySerGlnThrGluMetSerThrArgGluAsnAlaSerAspGlyIleProTyrProValProThrLeuGlnAspArgLeuAspTyrLeuGluGlyLysIleValArgLeuSerAsnGluValGluThrLeuAsnGlyLysValLysAlaLeuGluHisAlaLysThrHisSerSerGlyArgAlaTyrValGlnLysLeuAspAspArgLysLeuGluHiSsTyrLeuAsnThrGluGlyGlySerAlaSerAlaHisThrValGluThrAlaGlnAsnLeuTyrAsnGlnAlaLeuLysHistYrLysSerGlyLysPheSerAlaAlaAlaSerLeuIleLysGlyAlaAspGlyGlyAspGlyGlySerIleAlaGlnArgSerMetTyrLeuLeuLeuGlnSerArgAlaArgMetGlyAsnCysGluSerValIleGluIleGlyArgTyrAlaAsnArgPhesAspSerProThrAlaProGluAlaMetPhesIleGlyGluCysGlnTyrArgLeuGlnGlnLysAspIleAlaArgAlaThrTrpArgSerLeuIleGlnThrTyrProGlySerProAlaAlaLysArgAlaAlaAlaAlaValArgLysArg-237

Hydrophilic Regions - Hopp-Woods

1-MetLysIleLysLeuProLeuPheIleIleTrpLeuSerValSerAlaSerCysAlaSerValSerProValProAlaGlySerGlnThrGluMetSerThrArgGluAsnAlaSerAspGlyIleProTyrProValProThrLeuGlnAspArgLeuAspTyrLeuGluGlyLysIleValArgLeuSerAsnGluValGluThrLeuAsnGlyLysValLysAlaLeuGluHisAlaLysThrHisSerSerGlyArgAlaTyrValGlnLysLeuAspAspArgLysLeuLysGluHisTyrLeuAsnThrGluGlyGlySerAlaSerAlaHisThrValGluThrAlaGlnAsnLeuTyrAsnGlnAlaLeuLysHistYrLysSerGlyLysPheSerAlaAlaAlaSerLeuIleLysGlyAlaAspGlyGlyAspGlyGlySerIleAlaGlnArgSerMetTyrLeuLeuLeuGlnSerArgAlaArgMetGlyAsnCysGluSerValIleGluIleGlyArgTyrAlaAsnArgPhesAspSerProThrAlaProGluAlaMetPhesIleGlyGluCysGlnTyrArgLeuGlnGlnLysAspIleAlaArgAlaThrTrpArgSerLeuIleGlnThrTyrProGlySerProAlaAlaLysArgAlaAlaAlaAlaValArgLysArg-237

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AMPHI Regions - AMPHI

10-GluAlaAlaAlaAlaGluVal-15
44-GlyAsnGlnThrCysSerArgTyrSerAsn-53
89-LysGlnAlaValThr-93
103-ThrGlnAlaTyrAsnGluMetThrLysSerVal-113
166-PheAlaArgThrGlyLysLeu-172
174-GlySerPheAspLeuPheAlaSerVal-182
253-ProSerGluAlaPheAspLeuProGluGlySerThr-264
320-PheLeuArgPheTrpGlnAlaThrArgGlyIle-330

Antigenic Index - Jameson-Wolf

1-MetAlaArgArgSerLysThrPheGluGluAlaAlaGluValGluGluArgPheGlyHisArgGlyIleLys-25
30-GluGlyThrAlaLysProCysVal-37
39-AsnCysProLysHisGlyAsnGlnThrCysSerArgTyrSer-52
57-GlySerSerTrpGlyCysProSerCysGlyAsnGluGlnAlaAla-71
77-ThrLeuArgLysAsnHisIle-83
95-MetThrLysGlnGluArgIleThr-102
123-AspValGlnGlyAspThrThrIle-130
134-HisThrHisThrHisAsnHisSerAspAlaAspGlyLysAlaLeuSer-149
152-LeuThrProArgProLeuLeuSerAspArgGlnAla-163
167-AlaArgThrGlyLysLeuThrGly-174
194-MetProAspThrSerMet-199
201-ProValIleGluLysGlyAsp-207
213-ProArgMetCysProAlaAspGluAspIleAla-223
226-GluLeuSerAspLysArgLeuVal-233
248-TyrGlnThrGlyArgProSerGluAlaPheAspLeuProGluGlySerThr-264
270-LeuGluSerLysAsnGlyLeuCysProProHisArgGlnGluVal-285

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301-SerAlaSerLysThrSerCysThrArgProThrAlaAlaArgLysSerAla-317
 326-AlaThrArgGlyIleProLysThrArgSerTrpArgAsnProAsnAsnAla-342

Hydrophilic Regions - Hopp-Woods

1-MetAlaArgArgSerLysThrPheGluGluAlaAlaAlaGluValGluGluArgPheGlyHisArgGlyIleLy
 s-25
 65-CysGlyAsnGluGlnAlaAla-71
 77-ThrLeuArgLysAsnNisIle-83
 96-ThrLysGlnGluArgIleThr-102
 139-AsnHisSerAspAlaAspGlyLysAlaLeuSer-149
 157-LeuLeuSerAspArgGlnAla-163
 168-ArgThrGlyLysIle-172
 202-ValIleGluLysGlyAsp-207
 213-ProArgMetCysProAlaAspGluAspIleAla-223
 226-GluLeuSerAspLysArgLeuVal-233
 251-GlyArgProSerGluAlaPheAspIleProGlu-261
 270-LeuGluSerLysAsnGlyLeu-276
 280-HisArgGlnGluGlyVal-285
 303-SerLysThrSerCysThrArgProThrAlaAlaArgLysSerAla-317
 328-ArgGlyIleProLysThrArgSerTrpArgAsn-338

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AMPHI Regions - AMPHI
 9-ValValAlaPheAlaArgPhe-15
 36-ValGlyLysHisPheArgLysPheHisArgPheArgArgArgGlyGlu-51
 53-PheValAspPheLysGlnTrpAlaPheValGlyLeuPheArgLeuAlaArgLeuPheHisIleGlyAspAspP
 heValAspArgPheLeuGlyPhe-85
 121-GlyGluGluGluPheProGluAlaValValGluAlaAlaGlyAspValAlaArgHisPheAspValLeuAspLeu
 Val-145
 161-SerHisGlnAsnArgIle-166
 198-HisGlnThrLeuGlySerAspAlaGly-206
 210-ValGlnPheHisHisPheGly-216
 233-GlyLeuProSerGlyAsnGlyLeuGlyGlyLeuValAsnHisLeuArgLeuValAla-252
 268-IleGluValLeuArgArgAlaAspGlyGly-277
 279-AspGlyAlaAspValValAlaGlnMet-287

Antigenic Index - Jameson-Wolf

1-LeuArgArgValGlyGlyGln-7
 19-GlyValAspPheArgArgGlnLysPhePheGlyPheThrProArgGlnAlaVal-36
 38-LysHisPheArgLysPheHisArgPheArgArgArgGlyGluGly-52
 74-GlyAspAspPheValAspArg-80
 88-PheProLysArgAsnGlyValAla-95
 103-SerValGlnThrAspGlnGluPhe-110
 118-PheGlyGlnGlyGluGluPheProGlu-126
 131-AlaAlaGlyAspValAlaArg-137
 145-ValAlaProAspGly-149
 157-GlnAsnIleGlySerHisGlnAsnArgIleThrGluGlnThrHisPhe-172
 201-LeuGlySerAspAlaGlyGlnAsnProVal-210
 230-GluSerAlaGlyLysProSerGlyGlyAsnGly-240
 252-AlaPheAspAspThrValValIleGlyGluGluGluGlyPheGly-267
 270-ValLeuArgArgAlaAspGlyGlyAlaAspGlyAlaAsp-282
 285-AlaGlnMetArgAspAlaGlyGlyGlyTyrAlaGly-296
 311-MetProSerGluArgGluLysAspValProIle-321
 323-ProAspLeuProProThrSerSerArgGlnGlnThr-334

Hydrophilic Regions - Hopp-Woods

1-LeuArgArgValGly-5
 20-ValAspPheArgArgGlnLys-26
 38-LysHisPheArgLysPheHisArgPheArgArgGlyGluGly-52
 89-ProLysArgAsnGly-93
 105-GlnThrAspGlnGluPhe-110
 120-GlnGlyGluGluPhePro-125
 131-AlaAlaGlyAspValAlaArg-137
 162-HisGlnAsnArgIleThrGlu-168
 201-LeuGlySerAspAlaGlyGln-207
 231-SerAlaGlyLysProSerGly-237
 257-ValIleGlyGluGluGluGluGlyPheGly-267
 270-ValLeuArgArgAlaAspGlyGlyAlaAspGlyAlaAsp-282
 285-AlaGlnMetArgAspAlaGly-291
 311-MetProSerGluArgGluLysAspValProIle-321
 326-ProProThrSerSerArgGlnGln-333
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AMPHI Regions - AMPHI

20-GlyLeuPheThrValLeuGly-26
 55-ValSerLeuThrGluIlePheSerLysSer-64
 66-GluAlaPheAlaGluIleTyrAsp-73
 84-AlaPheLeuAlaGlyMetGlyGlyIleAlaLeuIle-95
 97-ArgLeuValProAsnProHisGluThrLeuAsp-107
 124-ValGlyMetMetAlaAlaPhe-130
 136-AsnPheProGluGlyLeuAlaThrPhePheAlaThrLeuGlu-149
 164-HisAsnIleProGluGlyIleSer-171
 190-CysLeuLeuSerGlyLeuAlaGluProLeuGlyAlaAla-202
 217-PheGlySerValPheGlyValIleAlaGlyValMet-228
 143-TyrSerAspGlyHisGlu-248

Antigenic Index - Jameson-Wolf

1-MetProAspPheSerMet-6
 33-SerLysThrProAsnProArgVal-40
 61-PheSerLysSerSerGluAlaPhe-68
 71-IleTyrAspLysAspHisAla-77
 98-LeuValProAsnProHisGluThrLeuAspAlaGlnAspProSerPheGlnGluSerLysArgArgHisIleAla-122
 136-AsnPheProGluGly-140
 179-AlaThrArgSerArgLysLysThr-186
 193-SerGlyLeuAlaGluProLeuGly-200
 235-GluLeuLeuProAlaAlaLysArgTyrSerAspGlyHisGluThr-249

Hydrophilic Regions - Hopp-Woods

61-PheSerLysSerSerGluAlaPhe-68
 71-IleTyrAspLysAspHisAla-77
 102-ProHisGluThrLeuAspAlaGlnAspProSerPheGlnGluSerLysArgArgHisIleAla-122
 180-ThrArgSerArgLysLysThr-186
 235-GluLeuLeuProAlaAlaLysArgTyrSerAspGlyHisGlu-248
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AMPHI Regions - AMPHI

1-LeuHisPheGlnArgIleIleLysCysSerGluGlyIleTrpAlaValGlyAlaArgProThrValGlyPhePh
 eGlyLysSerPheLysIleThrCysLysHisValValLeuArgArgArgThrValGlnAlaValAspPheThrThr
 CysLeuPheAlaValGlyHisPheValAspValProAlaTyrValPheAlaCysAspAlaHisThrGlyGlyValA
 laValLysArgValTyrGlyAlaAspValValGlnAsnSerGlyAlaPheCysGlnThrGlnGlyArgArgG

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nAsnThrValPheGlyIleMetPheGlnIleAlaGluGluProArgProAlaLeuArgAlaAlaProTyrHisAsnAlaValGlyGlyLeuPheGluAspGlyLeuGlyPheLeuArgArgSerAsnValAlaValAspPrcAspArgAspValGlnThrAlaPheGlyPheGlyAspGluPheValThrArgPheAlaPheValHisLeuArgThrArgAlaSerValAspGlyLysGlyGlyAspAlaIlePheGlyAspPheGlyAspAspGlyGlnValLeuMetValValValProThrGlnThrGlyPheGluGlyAsnGlyTyrAlaCysArgThrAspAspGlyPheGlnAsnGlyGlyAsnGlnArgLeuValLeuHisGlnArgAlaThrGlyLeuAspIleAlaAspPhePheSerGlyThrAlaHisValAspValAspLysLeuArgProLysAlaAspValValThrArgGlyIleArgHisLeuLeuArgIleAlaSerGlyAsnLeuHisGlyAsnAsnAlaAlaAlaPheIleGlyLysIleAlaAlaValGlnGlyPheSerSerIleSerGluArgArgValAlaArgGlyGlnHisPheAlaHisArgProThrCysAlaLysIleSerAlaLysSerAlaGluArgPheValGlyAsnAlaArgHisArgArgLysCysAspGlyValValAspLysIleAlaAlaAspValHisAsnGlySerAlaPheGlnLysSerThrProLeuTyrIlePhe-360

Antigenic Index - Jameson-Wolf

1-LeuHisPheGlnArgIleIleLysCysSerGluGlyIleTrpAlaValGlyAlaArgProThrValGlyPhePhenGlyLysSerPheLysIleThrCysLysHisValValLeuArgArgArgThrValGlnAlaValAspPheThrThrCysLeuPheAlaValGlyHisPheValAspValProAlaTyrValPheAlaCysAspAlaHisThrGlyGlyValAlaValLysArgValTyrGlyAlaAspValGlnAsnSerGlyGlyAlaPheCysGlnThrGlnGlyArgArgGlnAsnThrValPheGlyIleMetPheGlnIleAlaGluGluProArgProAlaLeuArgAlaAlaProTyrHisAsnAlaValGlyGlyLeuPheGluAspGlyLeuGlyPheLeuArgArgSerAsnValAlaValAspProAspArgAspValGlnThrAlaPheGlyPheGlyAspGluPheValThrArgPheAlaPheValHisLeuArgThrArgAlaSerValAspGlyLysGlyGlyAspAlaIlePheGlyAspPheGlyAspAspGlyGlnValLeuMetValValValProThrGlnThrGlyPheGluGlyAsnGlyTyrAlaCysArgThrAspAspGlyPheGlnAsnGlyGlyAsnGlnArgLeuValLeuHisGlnArgAlaThrGlyLeuAspIleAlaAspPhePheSerGlyThrAlaHisValAspValAspLysLeuArgProLysAlaAspValValThrArgGlyIleArgHisLeuLeuArgIleAlaSerGlyAsnLeuHisGlyAsnAsnAlaAlaPheIleGlyLysIleAlaAlaValGlnGlyPheSerSerIleSerGluArgArgValAlaArgGlyGlnHisPheAlaHisArgProThrCysAlaLysIleSerAlaLysSerAlaGluArgPheValGlyAsnAlaArgHisArgArgLysCysAspGlyValValAspLysIleAlaAlaAspValHisAsnGlySerAlaPheGlnLysSerThrProLeuTyrIlePhe-360

Hydrophilic Regions - Hopp-Woods

1-LeuHisPheGlnArgIleIleLysCysSerGluGlyIleTrpAlaValGlyAlaArgProThrValGlyPhePhenGlyLysSerPheLysIleThrCysLysHisValValLeuArgArgArgThrValGlnAlaValAspPheThrThrCysLeuPheAlaValGlyHisPheValAspValProAlaTyrValPheAlaCysAspAlaHisThrGlyGlyValAlaValLysArgValTyrGlyAlaAspValGlnAsnSerGlyGlyAlaPheCysGlnThrGlnGlyArgArgGlnAsnThrValPheGlyIleMetPheGlnIleAlaGluGluProArgProAlaLeuArgAlaAlaProTyrHisAsnAlaValGlyGlyLeuPheGluAspGlyLeuGlyPheLeuArgArgSerAsnValAlaValAspProAspArgAspValGlnThrAlaPheGlyPheGlyAspGluPheValThrArgPheAlaPheValHisLeuArgThrArgAlaSerValAspGlyLysGlyGlyAspAlaIlePheGlyAspPheGlyAspAspGlyGlnValLeuMetValValValProThrGlnThrGlyPheGluGlyAsnGlyTyrAlaCysArgThrAspAspGlyPheGlnAsnGlyGlyAsnGlnArgLeuValLeuHisGlnArgAlaThrGlyLeuAspIleAlaAspPhePheSerGlyThrAlaHisValAspValAspLysLeuArgProLysAlaAspValValThrArgGlyIleArgHisLeuLeuArgIleAlaSerGlyAsnLeuHisGlyAsnAsnAlaAlaAlaPheIleGlyLysIleAlaAlaValGlnGlyPheSerSerIleSerGluArgArgValAlaArgGlyGlnHisPheAlaHisArgProThrCysAlaLysIleSerAlaLysSerAlaGluArgPheValGlyAsnAlaArgHisArgArgLysCysAspGlyValValAspLysIleAlaAlaAspValHisAsnGlySerAlaPheGlnLysSerThrProLeuTyrIlePhe-360

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AMPHI Regions - AMPHI

29-GluLeuIleArgSerMetGlnArgGln-37
 109-AsnLeuSerArgLeuGlnLysAla-116
 191-GluGlnGlyLeuGluAsnLeuArgArgLeuProSerVal-203
 240-GlyGlyLysThrThrGlyLysTyr-247
 262-SerAspLeuPheTyr-266
 315-ArgTyrHisGluAlaThrGlu-321
 360-ThrArgGlnThrTyrLysTyrIleAspAsp-369

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560-HisLysProLysGlyPheGlnThrThrAsnThr-570

Antigenic Index - Jameson-Wolf

21-LeuAlaAlaAspGluAsnAspAlaGluLeuIleArgSerMetGlnArgGlnGlnHisIleAsp-41
 48-AlaAsnValArgPheGluGlnProLeuGluLysAsnAsnTyrValLeuSerGluAspGluThrProCysThrA
 rg-72
 77-SerLeuAspAspLysThrValArg-84
 106-GlySerAsnAsnLeuSerArgLeuGlnLysAlaAla-117
 135-ProGlnAsnMetAspSerGlyIleLeu-143
 146-ArgValSerAlaGlyGluIleGlyAspIleArgTyrGluGluLysArgAspGlyLysSerAlaGluGlySer
 Ile-170
 178-ProLeuTyrArgAsnLysIleLeuAsn-186

188-ArgAspValGluGlnGlyLeuGluAsnLeuArgArgLeuProSerValLysThrAspIle-207
 210-IleProSerGluGluGluGlyLysSerAspLeu-220
 223-LysTrpGlnGlnAsnLysProIleArg-231
 234-IleGlyIleAspAspAlaGlyGlyLysThrThrGlyLysTyrGlnGly-249
 256-AspAsnProLeugly-260
 269-TyrGlyArgGlyLeuAlaHisLysThrAspLeuThrAspAlaThrGlyThrGluThrGluSerGlySerArg
 SerTyr-294
 309-PheAsnHisAsnGlyHisArgTyrHisGluAlaThrGluGlyTyrSerValAsnTyrAspTyrAsnGlyLys
 GlnTyrGln-335
 343-MetLeuTrpArgAsnArgLeuHisLysThrSerVal-354
 362-GlnThrTyrLysTyrIleAspAspAlaGluIleGluValGlnArgArgArgSerAlaGlyTrpGluAlaGlu
 LeuArgHis-388
 395-TrpGlnLeuAspGlyLysLeuSerTyrLysArgGlyThrGlyMetArgGlnSerMetProAlaProGluGlu
 AsnGlyGlyAspIleLeuProGlyThrSerArgMetLysIle-432
 459-GlnTrpAsnLysThrPro-464
 467-AlaGlnAspLysLeuSerIleGlySerArgTyrThrValArgGlyPheAspGlyGluGlnSerLeuPheGly
 GluArgGlyPheTyrTrpGlnAsnThr-499
 514-AlaAspTyrGlyArgValSerGlyGluSerAla-524
 527-ValserGlyLysGln-531
 539-PheArgGlyGlyHisLysValGly-546
 557-LysProLeuHisLysProLysGlyPheGln-566

Hydrophilic Regions - Hopp-Woods

21-LeuAlaAlaAspGluAsnAspAlaGluIleArgSerMetGlnArgGlnGlnHisIleAsp-41
 48-AlaAsnValArgPheGluGlnProLeuGluLysAsnAsn-60
 63-LeuSerGluAspGluThrProCys-70
 77-SerLeuAspAspLysThrValArg-84
 109-AsnLeuSerArgLeuGlnLysAlaAla-117
 151-GluIleGlyAspIleArgTyrGluGluLysArgAspGlyLysSerAlaGluGlySer-169
 188-ArgAspValGluGlnGlyLeuGluAsnLeuArgArgLeuProSerValLysThrAspIle-207
 211-ProSerGluGluGlyLysSerAspLeu-220
 234-IleGlyIleAspAspAlaGlyGlyLysThrThrGlyLysTyr-247
 273-LeuAlaHisLysThrAspLeuThrAsp-281

283-ThrGlyThrGluThrGluSerGlySerArgSer-293
 315-ArgTyrHisGluAlaThrGlu-321
 366-TyrIleAspAspAlaGluIleGluValGlnArgArgArgSerAlaGlyTrp-382

384-AlaGluLeuArgHis-388

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399-GlyLysLeuSerTyrLysArgGlyThrGlyMetArgGlnSerMetProAlaProGluGluAsnGlyGly-42
 1
 428-SerArgMetLysIle-432
 467-AlaGlnAspLysLeuSerIle-473
 481-GlyPheAspGlyGluGln-486
 515-AspTyrGlyArgValSerGlyGluSer-523
 558-ProLeuHisLysProLysGly-564

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AMPHI Regions - AMPHI

23-AspPheAsnProPheGlnIleCysPheGlyValPheGlyGlnCysAla-39
 55-PheValAsnArgLeuAlaGlyPheHisArgIleGly-66
 89-PheAsnAlaValHisTyrIleGluPhe-97
 131-GluPheValSerAlaPheCysGlnThrTyr-140
 164-AlaGlnAsnIleIleGlnHisLeuArgThrTyrAlaArgAlaCysArgSerCysAlaArgGln-184
 193-IleSerAlaValValAspVal-199
 202-ArgThrLeuArgAlaPhe-207
 250-GlyIleValGlnMetLeu-255
 267-GlnPhePheThrGlnPhePheArgMetGlnGlnIleGlyGlyAlaAsn-282
 308-ArgCysPheAlaGlyLeuValGlu-315
 332-ThrAlaPheAspValPheHisAlaCys-340
 364-ValGlnThrPheMetGlnAspAla-371
 390-ArgIleValAlaAlaLeu-395
 402-GlyPhePheArgGlnProValAsn-409
 418-ProLeuCysAlaAspTyrTyrAsnIlePheSerHis-429

Antigenic Index - Jameson-Wolf

11-GlyAlaGlyGlyAspAspGlyAspArgArgAlaAlaAsp-23
 66-GlyThrAlaArgGlnAspVal-72
 84-AlaAspIleAspGly-88
 98-SerAsnThrHisThrGlyAsn-104
 106-ValAspLeuAspGly-110
 114-GlyGlyGlyIleLys-118
 126-SerGlyTyrArgThrGluPhe-132
 147-PheGlyArgGluArgAlaArgThrAspAlaArgGlyIleGlyPheAspAspAlaGln-165
 173-ThrTyrAlaArgAlaCysArgSerCysAlaArgGlnThrValGlyArgGlyAsnGluGlyIle-193
 199-ValGlnGlnArgThrLeuArgAlaPheLys-208
 224-HisValGlyAsnHisArgArgAsnAlaArgArgAspPhePheAspAsnArgHisHis-242
 261-IleGlyLysAspGlyIle-266
 279-GlyGlyAlaAsnGly-283
 293-ArgAlaAspAlaAlaAlaGlyArgAla-301
 314-ValGluArgAspValValArgGlnAspGlnArgAlaGlyArgArgAspPheGlnThr-332
 351-GlyPheGlyGlyAspAspAsnAlaArgThrAspGluAlaVal-364
 370-AspAlaAlaArgAsnGlnAlaGlnAsnGly-379
 384-AspAsnGlnGlyMet-388
 407-ProValAsnAspPhe-411

Hydrophilic Regions - Hopp-Woods

12-AlaGlyGlyAspAspGlyAspArgArgAlaAlaAsp-23
 66-GlyThrAlaArgGlnAspVal-72
 84-AlaAspIleAspGly-88
 147-PheGlyArgGluArgAlaArgThrAspAlaArgGlyIleGlyPheAspAspAlaGln-165
 173-ThrTyrAlaArgAlaCysArgSerCysAlaArg-183
 185-ThrValGlyArgGlyAsnGluGly-192
 199-ValGlnGlnArgThrLeuArgAlaPheLys-208

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226-GlyAsnHisArgArgAsnAlaArgArgAspPhePheAspAsnArgHisHis-242
 261-IleGlyLysAspGly-265
 293-ArgAlaAspAlaAlaAlaGlyArgAla-301
 314-ValGluArgAspValValArgGlnAspGlnArgAlaGlyArgArgAspPheGlnThr-332
 352-PheGlyGlyAspAspAsnAlaArgThrAspGluAlaVal-364
 370-AspAlaAlaArgAsnGlnAla-376

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AMPHI Regions - AMPHI
 42-AspAspValAlaSerValMetArgSer-50
 66-LysGluGlyGluArgTrpLeuSerAlaMetSer-76
 78-ArgLeuAlaArgPheVal-83
 129-GlyAlaArgGlyLeu-133
 142-AsnTyrIleGlyLysProAlaHis-149
 165-LeuArgHistYrrArgAsnLeuGluLysGlyAsn-175
 177-ValArgAlaLeuAlaArgPheAsnGly-185

Antigenic Index - Jameson-Wolf

1-MetArgLysProThrAspThrLeuPro-9
 12-LeuGlnArgArgArgLeuLeu-18
 33-GlyAlaGlnArgGluGluThrLeuAlaAspAspValAlaSer-46
 51-SerValGlySerValAsnProProArgLeuValPheAspAsnProLysGluGlyGluArgTrp-71
 83-ValProGluGluGluArgArgLeu-92
 97-GlnTyrGluSerSerArgAlaGlyLeu-105
 115-GluValGluSerAlaPhe-120
 142-AsnTyrIleGlyLysProAlaHisAsn-150
 155-ArgThrAsnLeuArgTyrGly-161
 168-TyrArgAsnLeuGluLysGlyAsnIle-176
 184-AsnGlySerLeuGlySerAsnLysTyrProAsnAla-195
 200-TrpArgAsnArgTrpGlnTrp-206

Hydrophilic Regions - Hopp-Woods

1-MetArgLysProThrAsp-6
 12-LeuGlnArgArgArgLeuLeu-18
 33-GlyAlaGlnArgGluGluThrLeuAlaAspAspValAlaSer-46
 60-LeuValPheAspAsnProLysGluGlyGluArgTrp-71
 83-ValProGluGluGluArgArgLeu-92
 99-GluSerSerArgAlaGlyLeu-105
 115-GluValGluSerAlaPhe-120
 169-ArgAsnLeuGluLysGlyAsnIle-176

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AMPHI Regions - AMPHI
 9-TyrLysGlnAsnLys-13
 26-ThrAlaAlaGluLeu-30
 127-ThrAspCysTyrArgSerTyrAspValLeuAspValArgGluPheSerHisPheSer-145

Antigenic Index - Jameson-Wolf

1-MetArgLysSerArgLeuSerArgTyrLysGlnAsnLysLeu-14
 51-GlnAsnSerProHis-55
 59-PheAspGlyGluValGluAlaAspGluSerTyrPheGlyGlyGlnArgLysGlyLysArgGlyArgGlyAlaA
 laGly-84
 91-LeuLeuLysArgAsnGlyLysVal-98
 115-IleArgGluGlnValLysProAspSerIleVal-125
 127-ThrAspCysTyrArgSerTyrAsp-134
 136-LeuAspValArgGlu-140
 161-ArgThrThrLysProTyr-166

Hydrophilic Regions - Hopp-Woods

1-MetArgLysSerArgLeuSerArgTyrLysGlnAsnLysLeu-14
 59-PheAspGlyGluValGluAlaAspGluSerTyr-69
 72-GlyGlnArgLysGlyLysArgGlyArgGlyAlaAlaGly-84
 92-LeuLysArgAsnGlyLys-97
 115-IleArgGluGlnValLysProAspSer-123
 136-LeuAspValArgGlu-140
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AMPHI Regions - AMPHI

71-GlyAsnAsnAlaAspGlu-76

Antigenic Index - Jameson-Wolf

22-ThrTyrGlnAspGlyAsnGlyLysThrAlaValArgGlnLysTyrProAlaGly-39
 45-GlnAspGlySerTyrSerLysAsnMetAsnTyrAsnGlnTyrArgProGluArgHisAla-64
 68-AsnGlnThrGlyAsnAlaAspGluGluHisArgGlnHisTrpGlnLysProLysPheGlnAsnArg-90

Hydrophilic Regions - Hopp-Woods

23-TyrGlnAspGlyAsnGlyLysThrAlaValArgGlnLysTyr-36
 58-TyrArgProGluArgHisAla-64
 72-AsnAsnAlaAspGluHisArgGlnHisTrpGln-83
 85-ProLysPheGlnAsnArg-90
910

AMPHI Regions - AMPHI

10-ValSerLeuSerAlaAla-15
 22-SerAlaGluArgGlnIle-27
 39-LysAlaValLysMetLeuGlu-45
 58-AspHisTrpGlyLysPro-63
 69-AlaTyrLysAspGlyArg-74

Antigenic Index - Jameson-Wolf

19-AlaGlyAspSerAlaGluArgGlnIleTyrGlyAspProHisPheGluGlnAsnArgThrLysAlaValLysM
 etLeuGluGlnArgGlyTyrGln-50
 53-AspValAspAlaAspAspHisTrpGlyLysProValLeuGlu-66
 68-GluAlaTyrLysAspGlyArgGluTyrAsp-77
 83-ProAspLeuLysIleIleLysGluGlnLeuAspArg-94

Hydrophilic Regions - Hopp-Woods

21-AspSerAlaGluArgGlnIleTyr-28
 31-ProHisPheGlnAsnArgThrLysAlaValLysMetLeuGluGlnArgGly-48
 53-AspValAspAlaAspAspHisTrpGly-61
 68-GluAlaTyrLysAspGlyArgGluTyrAsp-77
 86-LysIleIleLysGluGlnLeuAspArg-94
911

AMPHI Regions - AMPHI

6-LeuGluPheTrpValGlyLeuPhe-13
 43-ValTyrAlaAspPheGlyAspIleGly-51
 97-ValSerAlaGlnIle-101
 118-GlyAspThrGluAsnLeuAla-124
 140-AsnLeuIleGlyLysPheMetThrSerPhe-149

Antigenic Index - Jameson-Wolf

1-MetLysLysAsnIle-5
 35-GlyGlySerAspLysThrTyr-41
 48-GlyAspIleGlyLeuLysValAsnAlaProValLys-60

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74-LeuAspProLysSerTyrGlnAlaArgValArgLeuAspLeuAspGlyLysTyrGlnPheSerSerAspVal-
97
103-ThrSerGlyLeuLeuGly-108
115-GlnGlnGlyGlyAspThrGluasn-122
149-PheAlaGluLysAsnAlaAspGlyGlyAsnAlaGluLysAlaAlaGlu-164

Hydrophilic Regions - Hopp-Woods

1-MetLysLysAsnIle-5
36-GlySerAspLysThr-40
74-LeuAspProLysSerTyrGlnAlaArgValArgLeuAspLeuAspGly-89
116-GlnGlyGlyAspThrGluAsn-122
149-PheAlaGluLysAsnAlaAspGlyGlyAsnAlaGluLysAlaAlaGlu-164
912
AMPHI Regions - AMPHI
24-ProAlaAspAlaValSerGlnIle-31
62-PheAspPheGlnArgMetThrAlaLeuAlaValGlyAsnProTrpArgThrAlaSerAspAlaGlnLys-84
89-LysGluPheGlnThrLeu-94
169-TyrArgAsnGlnPheGlyGluIleIleLysAlaLys-180

Antigenic Index - Jameson-Wolf

1-MetLysSerSer-5
29-SerGlnIleArgGlnAsnAlaThrGln-37
42-LeuLysAsnGlyAspAlaAsnThrAlaArgGlnLysAlaGluAla-56
74-AsnProTrpArgThrAlaSerAspAlaGlnLysGlnAlaLeuAlaLysGluPhe-91
104-LeuLysLeuLysAsnAlaAsnValLysAspAsnProIleValAsnLysGlyGlyLysGluIleIle
Val-128
130-AlaGluValGlyValProGlyGlnLysProValAsn-141
146-ThrTyrGlnSerGlyGlyLysTyrArgThr-155
169-TyrArgAsnGlnPhe-173
177-IleLysAlaLysGlyValAspGlyLeuIleAla-187
189-LeuLysAlaLysAsnGlyGlyLys-196

Hydrophilic Regions - Hopp-Woods

1-MetLysSerSer-5
31-IleArgGlnAsnAla-35
43-LysAsnGlyAspAlaAsnThrAlaArgGlnLysAlaGluAla-56
78-ThrAlaSerAspAlaGlnLysGlnAlaLeuAlaLysGluPhe-91
104-LeuLysLeuLysAsn-108
110-AsnValAsnValLysAspAsnProIleVal-119
121-LysGlyGlyLysGluIleVal-128
134-ValProGlyGlnLysProValAsn-141
177-IleLysAlaLysGlyValAsp-183
189-LeuLysAlaLysAsnGlyGlyLys-196
913
AMPHI Regions - AMPHI
22-GluThrArgProAlaAspProTyrGluGlyTyrAsnArg-34
53-ArgGlyTyrArgLysValAlaProLys-61
66-GlyValSerAsnPhePheAsnAsnLeuCysAspValValSer-79
107-LeuGlyGlyLeuIleAspIleAlaGlyAla-116
151-ValArgAspAlaLeuGlyThrGlyIleThrSerValTyrSer-164
193-AspLeuThrAspSerLeuAspGluAlaAla-202
238-LeuValGluSerAla-242
257-SerGluThrGlnAla-261

Antigenic Index - Jameson-Wolf

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21-AlaGluThrArgProAlaAspProTyrGluGlyTyrAsn-33
 39-PheAsnAspGlnAlaAspArgTyr-46
 51-AlaAlaArgGlyTyrArgLysValAlaProLysProValArgAla-65
 81-GlySerAsnIleLeu-85
 87-LeuAspIleLysArgAlaSerGluAspLeuVal-97
 117-GlyGlyIleProAspAsnLysAsnThrLeuGlyAsp-128
 132-SerTrpGlyTrpLysAsnSerAsn-139
 149-SerThrValArgAspAlaLeu-155
 163-TyrSerProLysAsnIle-168
 172-ThrProValGlyArgTrpGly-178
 185-ValSerThrArgGluGlyLeuLeuAspLeuThrAspSerLeuAspGluAlaAlaIleAspLysTyrSerTyr
 ThrArgAspLeuTyrMet-214
 216-ValArgAlaArgGlnThrGlyAlaThrProAlaGluGlyThrGluAspAsnIleAspIleAspGluLeuVal
 GluSerAlaGluThrGlyAlaAla-247
 250-AlaValGlnGluAspSerValSerGluThrGlnAlaGluAlaAlaGlyGluAlaGluThrGlnProGlyThr
 GlnPro-275

Hydrophilic Regions - Hopp-Woods

21-AlaGluThrArgProAlaAspProTyrGluGlyTyrAsn-33
 40-AsnAspGlnAlaAsp-44
 53-ArgGlyTyrArgLysValAlaProLysProValArg-64
 87-LeuAspIleLysArgAlaSerGluAspLeuVal-97
 118-GlyIleProAspAsnLysAsnThrLeu-126
 150-ThrValArgAspAlaLeu-155
 186-SerThrArgGluGlyLeuLeuAspLeuLeuThrAspSerLeuAspGluAlaAlaIleAsp-204
 216-ValArgAlaArgGlnThrGly-222
 224-ThrProAlaGluGlyThrGluAspAsnIleAspIleAspGluLeuValGluSerAlaGluThrGlyAlaAla
 -247
 250-AlaValGlnGluAspSerValSerGluThrGlnAlaGluAlaAlaGlyGluAlaGluThrGlnPro-271
915-2
AMPHI Regions - AMPHI
 6-LeuGlyIleLeuThrAlaCysAlaAlaMet-15
 17-AlaPheAlaAspArgIleGlyAspLeu-25
 65-PheGlnLysThrPheGlu-70
 81-GlnLysValArgGlnAlaCys-87

Antigenic Index - Jameson-Wolf

18-PheAlaAspArgIleGlyAspLeuGluAlaArgLeuAlaGlnLeuGluHisArgValAlaValLeuGluSerG
 lyGlyAsnThrValLys-47
 50-LeuPheGlySerAsnSer-55
 64-ProPheGlnLysThrPheGluAlaSerAspArgAsnGluGlyValAlaArgGlnLysValArgGlnAlaCysA
 snArgGluThrSerAla-93
 95-PheCysGluAspGluAlaIleArgCysArgLysPheAsp-107

Hydrophilic Regions - Hopp-Woods

18-PheAlaAspArgIleGlyAspLeuGluAlaArgLeuAlaGlnLeuGluHisArgValAlaVal-38
 67-LysThrPheGluAlaSerAspArgAsnGluGlyValAlaArgGlnLysValArgGlnAlaCysAsnArgGluT
 hrSer-92
 95-PheCysGluAspGluAlaIleArgCysArgLysPheAsp-107
915-2
AMPHI Regions - AMPHI
 9-ValAlaValSerAlaLeuSerAlaCysArgGlnAla-20
 31-IleSerAspArgSerVal-36
 67-SerThrIleLysGlnMetPheGlyTyrThrLysLeuProGluGluProLysGlyIleArgValIleTyrValT
 hrAspMetGlyAsnValThrAspTrpThr-100

139-GlnAlaGluLysPhe-143

Antigenic Index - Jameson-Wolf

15-SerAlaCysArgGlnAlaGluGluGlyProProProLeuProArgGlnIleSerAspArgSerValGlyHis-
38
43-AsnLeuThrGluHisAsnGlyProLysAla-52
57-AsnGlyLysProAspGlnProVal-64
75-TyrThrLysLeuProGluGluProLysGlyIle-85
97-ThrAspTrpThrAsnProAsnAlaAspThrGluTrpMetAspAlaLysLys-113
125-GlyMetGlyAlaGluAspAlaLeuProPheGlyAsnLysGluGlnAlaGluLysPheAlaLysAspLysGly
GlyLysValValGlyPheAspAspMetProAspThrTyr-161

Hydrophilic Regions - Hopp-Woods

18-ArgGlnAlaGluGluGlyProProProLeu-27
30-GlnIleSerAspArgSerVal-36
46-GluHisAsnGlyProLys-51
58-GlyLysProAspGln-62
77-LysLeuProGluGluProLysGlyIle-85
103-AsnAlaAspThrGluTrpMetAspAlaLysLys-113
127-GlyAlaGluAspAlaLeu-132
135-GlyAsnLysGluGlnAlaGluLysPheAlaLysAspLysGlyGlyLys-150
155-AspAspMetProAsp-159

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AMPHI Regions - AMPHI

6-ProLeuAlaValLeuThrAlaLeuLeuLeu-15
35-GlnAsnValLeuLysIleTyrAsnTrpSerGluTyrValAspProGluThrValAlaAsp-54
99-IleLysAlaGlyAlaTyrGlnLysIleAspLysSerLeu-111
124-ArgLeuMetAspGlyValAspPro-131
152-ArgValLysLysAlaLeu-157
188-AspSerAlaAlaGlu-192
206-AsnSerSerAsnThrGluAspIleArgGluAlaThr-217
292-AlaLysAsnValAlaAsnAlaHisLysTyrIleAsnAspPheLeuAsp-307
325-LysProAlaArgGluLeuMetGluAsp-333

Antigenic Index - Jameson-Wolf

18-CysGlyGlySerAspLysProProAlaGluLysProAlaProAlaGluAsnGlnAsnVal-37
44-SerGluTyrValProGluThrValAlaAspPheGluLysAsnGlyIleLysValThr-64
68-TyrAspSerAspGluThrLeuGluSerLysValLeuThrGlyLysSerGlyTyrAsp-86
102-GlyAlaTyrGlnLysIleAspLysSerLeuIleProAsnTyrLysHisLeuAsnProGluMetMetArgLeu
MetAspGlyValAspProGlyHisGluTyr-135
149-AsnThrGluArgValLysAlaLeuGlyThrAspLysLeuProAspAsnGln-166
171-PheAspProGluTyrThrSerLysLeuLysGlnCysGly-183
201-LeuGlyLysAsnProAsnSerSerAsnThrGluAspIleArgGluAlaThrAlaLeuLeuLysLysAsnArg
ProAsnIleLysArgPheThrSerSerGlyPheIle-236
238-AspLeuAlaArgGlyAspThr-244
255-AsnIleAlaLysArgArgAlaGluGluAlaGlyGlyLysGluLysIleArgValMetMetProLysGluGly
ValGly-280
287-ValIleProLysAspAlaLysAsnValAlaAsn-297
305-PheLeuAspProGluValSerAlaLysAsnGlyAsn-316
320-TyrAlaProSerSerLysProAlaArgGluLeuMetGluAspGluPheLysAsnAspAsnThrIlePhePro
ThrGluAspLeuLysAsn-350
368-GlnTrpGlnAspValLysAlaGlyLys-376

Hydrophilic Regions - Hopp-Woods

19-GlyGlySerAspLysProAlaGluLysProAlaProAlaGluAsn-34

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47-ValAspProGluThrValAlaAspPheGluLysLysAsnGlyIle-61
 68-TyrAspSerAspGluThrLeuGluSerLysValLeuThr-80
 105-GlnLysIleAspLysSerLeu-111
 121-GluMetMetArgLeuMetAspGlyValAspProGlyHis-133
 149-AsnThrGluArgValLysLysAlaLeuGlyThrAspLysLeuProAspAsnGln-166
 174-GluTyrThrSerLysLeuLysGln-181
 204-AsnProAsnSerSerAsnThrGluAspIleArgGluAlaThrAlaLeuLysLysAsnArgProAsnIle
 LysArgPheThr-231
 238-AspLeuAlaArgGlyAspThr-244
 255-AsnIleAlaLysArgArgAlaGluGluAlaGlyGlyLysGluLysIleArgValMetMetProLysGluGly
 -278
 290-LysAspAlaLysAsnValAlaAsn-297
 305-PheLeuAspProGluValSerAlaLysAsn-314
 322-ProSerSerLysProAlaArgGluLeuMetGluAspGluPheLysAsnAspAsn-339
 343-ProThrGluAspLeuLysAsn-350
 370-GlnAspValLysAlaGlyLys-376
 919

AMPHI Regions - AMPHI

12-GlyIleAlaAlaAlaIleLeu-18
 24-LysSerIleGlnThrPheProGln-31
 37-IleAsnGlyProAspArgProValGlyIleProAsp-48
 76-AspPheAlaLysSerLeuGln-82
 98-GlnAspValCysAlaGlnAlaPheGlnThrProVal-109
 119-GluArgTyrPheThr-123
 133-LeuAlaGlyThrValThrGlyTyrTyrGlu-142
 161-GlyIleProAspAspPheIleSerValPro-170
 176-ArgSerGlyLysAlaLeuValArgIleArgGln-186
 191-SerGlyThrIleAspAsnThrGlyGlyThr-200
 307-MetGlnGlyIleLysSerTyrMetArgGlnAsnProGlnArgLeuAlaGluValLeu-325
 348-AlaLeuGlyThrProLeuMetGlyGluTyrAlaGlyAlaVal-361
 382-ArgLysAlaLeuAsnArg-387

Antigenic Index - Jameson-Wolf

21-CysGlnSerLysSerIleGlnThr-28
 30-ProGlnProAspThr-34
 36-ValIleAsnGlyProAspArgProValGlyIleProAspProAlaGlyThr-52
 54-ValGlyGlyGly-58
 76-AspPheAlaLysSerLeuGln-82
 87-GlyCysAlaAsnLeuLysAsnArgGlnGlyTrpGln-98
 121-TyrPheThrProTrp-125
 143-ProValLeuLysGlyAspAspArgArgThrAlaGln-154
 162-IleProAspAspPheIle-167
 173-AlaGlyLeuArgSerGlyLysAlaLeuValArgIleArgGlnThrGlyLysAsnSerGlyThrIleAspAsn
 ThrGlyGlyThrHis-201
 215-ThrAlaIleLysGlyArgPheGluGlySerArgPheLeuProTyrHisThrArgAsnGlnIleAsnGlyGly
 AlaLeuAspGlyLysAlaPro-245
 250-AlaGluAspProValGlu-255
 262-GlnGlySerGlyArgLeuLysThrProSerGlyLysTyrIleArg-276
 278-GlyTyrAlaAspLysAsnGluHisPro-286
 293-TyrMetAlaAspLysGlyTyrLeuLysLeuGlyGln-304
 308-GlnGlyIleLysSerTyrMetArgGlnAsnProGlnArgLeuAlaGlu-323
 326-GlyGlnAsnProSer-330
 337-LeuAlaGlySerSerAsnAspGlyProVal-346
 359-GlyAlaValAspArgHisTyr-365
 379-ProValThrArgLysAlaLeuAsn-386

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393-AspThrGlySerAlaIleLysGlyAlaValArg-403
 409-GlyTyrGlyAspGluAlaGlyGluLeuAlaGlyLysGlnLysThrThr-424
 431-LeuProAsnGlyMetLysProGluTyrArgPro-441

Hydrophilic Regions - Hopp-Woods

18-AsnGlyProAspArgProValGly-45
 90-AsnLeuLysAsnArgGlnGlyTrp-97
 144-ValLeuLysGlyAspAspArgArgThrAlaGln-154
 175-LeuArgSerGlyLysAlaLeuValArgIleArgGlnThrGlyLysAsnSerGlyThrIleAspAsnThrGly-198
 215-ThrAlaIleLysGlyArgPheGluGly-223
 239-AlaLeuAspGlyLysIla-244
 250-AlaGluAspProVal-254
 265-GlyArgLeuLysThrProSer-271
 279-TyrAlaAspLysAsnGluHis-285
 317-AsnProGlnArgLeuAlaGlu-323
 337-LeuAlaGlySerSerAsnAspGlyPro-345
 380-ValThrArgLysAlaLeuAsn-386
 393-AspThrGlySerAlaIle-398
 412-AspGluAlaGlyGluLeuAlaGlyLysGlnLysThr-423
 434-GlyMetLysProGluTyrArgPro-441

920-2

AMPHI Regions - AMPHI

43-GlyGluPheProGluLeuGluProIleAla-52
 117-GlyIleLysGluMetProAsp-123
 135-LysAsnIleValAsnVal-140
 163-LeuAspAsnProAlaAsn-168
 190-ThrValThrAlaThrPheAspGlyPheAspThrSerAspArgSerLys-205
 212-GlnAlaPheSerAspSerThr-218

Antigenic Index - Jameson-Wolf

40-LeuGlyTyrGlyGluPheProGlu-47
 49-GluProIleAlaLysAspArgLeu-56
 66-ValThrGluLysGlyLysGluAsnMetIle-75
 77-ArgGlyThrTyrAsnTyrGlnTyrArgSerAsnArgProValLysAspGlySerTyr-95
 104-ThrPheTrpSerLysAsnLysAlaGlyTrp-113
 116-AlaGlyIleLysGluMetProAspAlaSerTyrCysGluGlnThrArgMetPheGlyLysAsnIleValAsnValGlyHisGluSerAlaAspThr-147
 152-LysProValGlyGlnAsnLeuGlu-159
 162-ProLeuAspAsnProAla-167
 173-GluArgPheIysVal-177
 181-PheArgGlyGluProLeuProAsnAla-189
 194-ThrPheAspGlyPheAspThrSerAspArgSerLysThrHisLysThrGluAla-211
 213-AlaPheSerAspSerThrAspAspLysGlyGluValAsp-225
 237-AsnValGluHisLysThrAspPheProAspGlnSerValCysGlnLysGlnAlaAsnTyrSer-257

Hydrophilic Regions - Hopp-Woods

49-GluProIleAlaLysAspArgLeu-56
 66-ValThrGluLysGlyLysGluAsnMetIle-75
 85-ArgSerAsnArgProValLysAspGlySer-94
 107-SerLysAsnLysAlaGlyTrp-113
 116-AlaGlyIleLysGluMetProAsp-123
 128-GluGlnThrArgMetPheGly-134
 142-HisGluSerAlaAsp-146
 173-GluArgPheLysVal-177

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196-AspGlyPheAspThrSerAspArgSerLysThrHisLysThrGluAla-211

213-AlaPheSerAspSerThrAspAspLysGlyGluValAsp-225

237-AsnValGluHisLysThrAspPheProAsp-246

248-SerValCysGlnLys-252

921

AMPHI Regions - AMPHI

12-AlaValLeuSerGlyCysGlnSerIleTyrValProThrLeuThrGluIleProValAsn-31

33-IleAsnThrValLysThr-38

51-HisTrpThrAspValAlaLysIleSerAspGlu-61

72-GlyLysMetThrLysValGlnAlaAlaGlnTyrLeuAsnAsnPheArgLys-88

98-AspSerMetTyrGluIleTyrLeuArg-106

126-GlnAsnAlaLeuArgGlyTrpGlnGlnArg-135

Antigenic Index - Jameson-Wolf

36-ValLysThrGluAlaProAlaLysGlyPheArg-46

56-AlaLysIleSerAspGluAlaThrArg-64

72-GlyLysMetThrLys-76

84-AsnAsnPheArgLysArgLeuValGlyArgAsnAlaValAspAspSerMet-100

108-AlaIleAspSerGlnArgGlyAlaIleAsnThrGluGlnSerLys-122

128-AlaLeuArgGlyTrpGlnGlnArgTrpLysAsnMetAspValLysProAsnAsnProAla-147

Hydrophilic Regions - Hopp-Woods

36-ValLysThrGluAlaProAlaLysGlyPheArg-46

56-AlaLysIleSerAspGluAlaThrArg-64

86-PheArgLysArgLeuValGly-92

94-AsnAlaValAspAspSerMet-100

108-AlaIleAspSerGlnArgGlyAlaIleAsnThrGluGlnSerLys-122

136-TrpLysAsnMetAspValLysProAsnAsn-145

922

AMPHI Regions - AMPHI

16-LeuSerAlaCysThr-20

28-ArgAlaAsnGluAlaGlnAlaPro-35

"

37-AlaValGluMetLysLys-42

72-ValArgArgPheValAspAsp-78

89-GluTrpGlnAspPhePheAspLys-96

104-ValLysIleMetHis-108

144-AspAspValAlaGln-148

172-GlySerPheArgValAlaAspAlaLeu-180

196-LysGluLeuValGluLeuLeuLysLeuAla-205

222-AlaMetGlyMetPro-226

245-HisArgAspIleTrpGlyAsnValGlyAspValAlaAlaSerValAlaAsnTyrMetLysGlnHis-266

298-ArgThrValAlaAspLeuLysAlaTyr-306

335-TyrLeuGlyLeuAsnAsnPheTyrThr-343

"

Antigenic Index - Jameson-Wolf

1-MetLysLysArgLysIleLeu-7

22-MetGluAlaArgProProArgAlaAsnGluAlaGlnAlaProArgAlaValGluMetLysLysGluSerArgP
roAlaPhe-48

61-ValSerAspSerGlyPhe-66

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70-AlaAsnValArgArgPheValAspAspGluValGlyLysGlyAspPheSerArgAlaGluTrp-90
"

107-MetHisArgProSerThrSerArgPro-115

120-ArgThrGlyAsnSerGlyLysAlaLysPheArgGlyAlaArgArgPheTyrAlaGluAsnArgAlaLeuIle-143

145-AspValAlaGlnLysTyrGlyVal-152

163-IleGluThrAsnTyrGlyLysAsnThrGlySer-173
"

186-AspTyrProArgArgAlaGlyPhePhe-194
"

203-LysLeuAlaLysGluGluGlyGlyAsp-211

229-MetProSerSerTyrArgLysTrpAlaValAspTyrAspGlyAspGlyHisArgAspIle-248

266-HisGlyTrpArgThrGlyGlyLysMet-274
"

281-AlaProGlyAlaAsp-285

290-IleGlyGluLysThrAlaLeu-296
"

310-ProGlyGluGluLeuAlaAspAspGluLysAlaVal-321

326-GluThrAlaProGly-330

357-ValArgAspIleAlaAsnSerLeuGlyGlyProGlyLeu-369

Hydrophilic Regions - Hopp-Woods

1-MetLysArgLysIleLeu-7

22-MetGluAlaArgProProArgAlaAsnGluAlaGlnAlaProArgAlaValGluMetLysLysGluSerArgP

roAlaPhe-48

70-AlaAsnValArgArgPheValAspAspGluValGlyLysGlyAspPheSerArgAlaGluTrp-90
"

122-GlyAsnSerGlyLysAlaLysPheArgGlyAlaArgArgPheTyrAlaGluAsnArgAlaLeuIle-143

166-AsnTyrGlyLysAsnThrGly-172

187-TyrProArgArgAlaGlyPhePhe-194

203-LysLeuAlaLysGluGluGlyGlyAsp-211

240-TyrAspGlyAspGlyHisArgAspIle-248

290-IleGlyGluLysThrAlaLeu-296
"

310-ProGlyGluGluLeuAlaAspAspGluLysAlaVal-321

357-ValArgAspIleAla-361

923-2

AMPHI Regions - AMPHI

9-LeuMetAlaCysAlaAlaPheLeu-16

26-LeuGlyAlaCysTyrAlaIleLeuSerLeuTyrAla-37

63-ProAlaLeuLeuGlyGlyTrpValGlyAlaTyr-73

117-GlyValAlaSerProCysArgThrIleCysThrValCysGlyPheValAlaLeu-134

Antigenic Index - Jameson-Wolf

43-IleAspLysArgCysAlaIleArgGlyGlnArgArgIleProGluHisArgLeu-60
 79-PheLysHisLysThrAlaLysLysArgPhe-88

Hydrophilic Regions - Hopp-Woods

43-IleAspLysArgCysAlaIleArgGlyGlnArgArgIleProGluHisArgLeu-60

79-PheLysHisLysThrAlaLysLysArgPhe-88

925-1

AMPHI Regions - AMPHI

8-ValGlyValValAlaValLeu-14

116-LysCysGlyGlnThrAlaGlnAlaTyrArgAspAla-127

139-GlnHisLeuAlaAlaIleGluGlnLeuLys-148

155-PheAspGluLeuGlu-159

Antigenic Index - Jameson-Wolf

15-AlaGlyCysGlyLysAspAlaGlyGlyTyrGluGlyTyrTrpArgGluLysSerAspLysLysGluGlyMetI
 leAlaValLysLysGluLysGlyAsn-47

57-ThrGlyLysGluGluSerLeuLeuLeuSerGluLysAspGlyAla-71

75-AsnThrGlyIleGly-79

81-IleProIleLysLeuSerAspAspGlyLysGluLeuTyrValGluArgArgGlnTyrValLysThrAspAlaA
 laMetLysAspLysIleIleAlaHisGlnLysLysCysGlyGlnThr-120

123-AlaTyrArgAspAlaArgAsnAlaLeuProSerAsnGlnThrTyr-137

145-GluGlnLeuLysArgArgPheGluAlaGluPheAspGluLeuGluLysGluIleLysCysAsnGlyArgSer
 ProAla-170

Hydrophilic Regions - Hopp-Woods

17-CysGlyLysAspAlaGlyGly-23

27-TyrTrpArgGluLysSerAspLysGluGlyMetIleAlaValLysLysGluLysGly-46

57-ThrGlyLysGluGluSerLeuLeuLeuSerGluLysAspGlyAla-71

81-IleProIleLysLeuSerAspAspGlyLysGluLeuTyrValGluArgArgGlnTyrValLysThrAspAlaA
 laMetLysAspLysIleIleAlaHisGlnLysLysCysGlyGln-119

123-AlaTyrArgAspAlaArgAsnAlaLeu-131

145-GluGlnLeuLysArgArgPheGluAlaGluPheAspGluLeuGluLysGluIleLysCysAsnGlyArgSer
 -168

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AMPHI Regions - AMPHI

29-ProSerGluHisIleSerSerPhe-36

72-LeuGlySerThrLeuGlyGln-78

98-AlaGluSerAlaGluGluLeuSerArgGln-107

128-AlaGlyAlaProTyrArgIleLeuProAspGlyIle-139

151-AlaAspSerGlyGlyGlnVal-157

Antigenic Index - Jameson-Wolf

19-LeuProGlnAsnAsnGluAsnLeuTrpGlnProSerGluHisIleSer-34

37-AlaAlaGluGlyArgLeuAlaValLysAlaGluGlyLysGlySerTyrAla-53

70-ThrProLeuGlySer-74

79-LeuCysGlnAspArgAspGlyAlaLeu-87

89-ValAspGlyLysGlyAsnValTyr-96

99-GluSerAlaGluGluLeuSerArg-106

121-TrpAlaAspGlyArgArgValAla-128

134-IleLeuProAspGlyIleLeu-140

148-GlyArgThrAlaAspSerGlyGlyGln-156

177-GlyMetProSerGluThrGluThrProGluArgCysAlaAlaArgThrArg-193

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Hydrophilic Regions - Hopp-Woods

37-AlaAlaGluGlyArgLeuAlaValLysAlaGluGlyLysGlySer-51
 80-CysGlnAspArgAspGlyAlaLeu-87
 89-ValAspGlyLysGly-93
 99-GluSerAlaGluGluLeuSerArg-106
 123-AspGlyArgArgValAla-128
 149-ArgThrAlaAspSerGlyGlyGln-156
 180-SerGluThrGluThrProGluArgCysAlaAlaArgThrArg-193
927-2

AMPHI Regions - AMPHI

13-LeuleuThrAlaCys-17
 48-SerTyrAspValAlaArgAspPheTyrLysGlu-58
 120-LysGlyTrpGlnGlnAlaLeuPro-127
 145-AsnProLysGlnIleArgAspTrpAsnAspLeuAlaLysAspGly-159
 197-LysLeuValAlaSerIleLeu-203
 223-ArgAsnIleGlyAspValLeu-229
 275-ThrGlnLysThrAlaArgAla-281
 283-LeuGluTyrLeuTrpSerGluProAlaGlnGluLeu-294
 325-LysPheGlyGlyTrpAspAsnIleMetLysThr-336

Antigenic Index - Jameson-Wolf

18-SerProAlaAlaAspSerAsnHisProSerGlyGlnAsnAlaProAlaAsnThrGluSerAspGlyLysAsnIleThr-43
 48-SerTyrAspValAlaArgAspPheTyrLysGluTyrAsnPro-61
 67-TyrGlnSerGluHisProGlyThrSer-75
 79-GlnGlnSerHisGlyGlySerSerLysGlnAla-89
 104-AsnGlnSerSerAspIleAspLeuGluLysLysGlyLeuVal-118
 125-AlaIeuProAspHisAlaAlaProTyrThr-134
 142-ArgLysAsnAsnProLysGlnIleArgAspTrpAsnAspLeuAlaLysAspGlyVal-160
 166-AsnProLysThrSerGlyAsnGlyArg-174
 185-LeuLysThrThrAsnGlyAsnGluGlnGluAlaGlnLys-197
 203-LeuLysAsnThrProValPheGluAsnGlyGlyArgAlaAlaThr-217
 220-PheThrGlnArgAsnIleGlyAsp-227
 238-TyrValSerIlysLysLeuThrGlnGlyGln-247
 270-ValAlaLysLysGlyThrGlnLysThrAlaArgAla-281
 300-LeuArgProArgAsnProGluValLeuAlaArgHisLysAlaAspPheProAspLeuAspThrPheSerProGluLysPheGlyGlyTrp-330
 337-TyrPheAlaAspGlyGlyIle-343
 347-LeuThrAlaGlnLys-351

Hydrophilic Regions - Hopp-Woods

19-ProAlaAlaAspSerAsnHisProSer-27
 33-AlaAsnThrGluSerAspGlyLysAsn-41
 50-AspValAlaArgAspPheTyrLys-57
 67-TyrGlnSerGluHisProGly-73
 82-HisGlyGlySerSerLysGlnAla-89
 105-GlnSerSerAspIleAspLeuGluLysLysGlyLeuVal-118
 142-ArgLysAsnAsnProLysGlnIleArgAspTrpAsnAspLeuAlaLysAspGlyVal-160
 167-ProLysThrSerGlyAsnGly-173
 187-ThrThrAsnGlyAsnGluGlnGluAlaGlnLys-197
 211-AsnGlyGlyArgAlaAla-216
 238-TyrValSerIlysLysLeuThr-244
 270-ValAlaLysLysGlyThrGlnLysThrAlaArgAla-281
 300-LeuArgProArgAsnProGluValLeuAlaArgHisLysAlaAspPheProAsp-317
 319-AspThrPheSerProGluLysLysPheGlyGly-329

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347-LeuThrAlaGlnLys-351

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AMPHI Regions - AMPHI

25-ValProAspGlyValLys-30

34-TrpThrLeuLeuAlaMetPheValGlyValIleAlaAlaIleIle-48

76-GlyAlaAlaMetSerAspAlaLeuSerAlaPhe-86

155-HisProIleMetGlnSerIleAlaGlySerTyrGlySerAsnProAlaLys-171

180-TyrLeuAlaLeuVal-184

204-ProLeuIleValAsnLeuIleAlaGluAsnLeuGly-215

233-GlyValIleAlaPhePhe-238

265-ArgLeuArgGluMetGlyLysMetSer-273

280-AlaValIlePheGlyIle-285

355-LeuGlyLeuIleLysTrpPheSerGlyValLeuAlaGluSerValGlyGlyLeu-372

398-ThrAlaHisIleThrAlaMetPheGlyAlaPhePheAla-410

452-TyrThrThrMetGlyGluTrpTrp-459

Antigenic Index - Jameson-Wolf

25-ValProAspGlyValLysProGln-32

71-ThrAlaAspLysProGlyAlaAlaMet-79

122-GlyArgLysThrLeuGlyIle-128

143-ThrProSerAsnThrAlaArgGlyGlyGly-152

163-GlySerTyrGlySerAsnProAlaLysGlyThrGluGlyLysMetGlyLys-179

187-HisSerAsnProIleSer-192

213-AsnLeuGlySerSerPhe-218

248-TyrProProGluIleLysGluThrProAsn-257

261-PheAlaLysAspArgLeuArgGluMetGlyLysMetSerAlaAspGluIle-277

328-AspValLeuLysGluLysSerAlaTrp-336

Hydrophilic Regions - Hopp-Woods

71-ThrAlaAspLysProGlyAlaAlaMet-79

146-AsnThrAlaArgGly-150

168-AsnProAlaLysGlyThrGluGlyLysMetGlyLys-179

250-ProGluIleLysGluThrProAsn-257

261-PheAlaLysAspArgLeuArgGluMetGlyLysMetSerAlaAspGluIle-277

328-AspValLeuLysGluLysSerAlaTrp-336

930-1

AMPHI Regions - AMPHI

8-LeuProAsnIleArg-12

69-AsnThrGlyGluThrValAsnGlnLeuMetGly-79

121-LeuHisAlaGlyAsnIleAsnGlnIleMetSerLeu-132

147-IleLeuAlaAlaPro-151

165-ProSerTyrLeuArgSerIleArgIle-173

199-AspLeuLeuAsnLeuArgAsp-205

"

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207-GluGlnGlyLeuGluAsnLeuLysArgLeuProThr-218

280-SerAspMetPheTyr-284

288-GlyArgSerIleGlyGlyThrProAsp-296

333-ArgTyrHisGlnAlaValSerGlyLeuSerGluValTyrAsp-346

400-TrpLeuAlaGluLeu-404

427-MetLysAspAlaLeuArgAlaProGluGluAlaPheGlyGluGly-441

472-HisAlaGlnTrpAsnLys-477

Antigenic Index - Jameson-Wolf

-342-

32-SerProAsnProAlaGluIleArgMetGlnGlnAspIleGlnGlnArgGlnArgGluGluGlnLeuArgGlnT
 hrMetGlnProGluSerAspValArgLeuHisGlnLysAsnThrGlyGluThr-73
 77-LeuMetGlyAspAspSerSerGln-84
 93-ValLeuGluGlyGluHisHisAla-100
 108-ArgAlaLeuArgGluThrGly-114
 118-GlyLysCysLeuHisAlaGlyAsn-125
 151-ProGlnAspLeuAsnSerGlyLysLeu-159
 171-IleArgIleAspArgSerAsnAspAspGlnThrHis-182
 191-AsnLysPheProThrArgSerAsnAspLeuLeuAsn-202

 204-ArgAspLeuGluGlnGlyLeuGluAsnLeuLysArgLeuProThrAlaGluAlaAspLeu-223
 228-ValGluGlyGluProAsnGlnSerAspVal-237
 242-ArgGlnArgLeuLeuPro-247
 252-ValGlyMetAspAsnSerGlySerGluAlaThrGlyLysTyrGlnGly-267
 273-AlaAspAsnProLeuGlyLeu-279
 287-TyrGlyArgSerIleGlyGlyThrProAspGluGluSerPheAspGlyHisArgLysGluGlyGlySerAsn-310
 329-HisAsnGlyTyrArg-333
 343-GluValTyrAspTyrAsnGlyLysSerTyrAsnThrAspPheGlyPhe-358
 362-LeuTyrArgAspAlaLysArgLysThr-370
 377-TrpMetArgGluThrLysSerTyrIleAspAspAlaGluLeuThrValGlnArgArgLysThrAla-398
 408-GluTyrIleGlyArgSerThrAlaAspPheLysLeuLysTyrLysArgGlyThrGlyMetLysAspAlaLeu
 ArgAlaProGluGluAlaPheGlyGluGlyThrSerArg-444
 451-SerAlaAspValAsnThrPro-457
 474-GlnTrpAsnLysThrProLeuThrSerGlnAspLysLeuAla-487
 492-HisThrValArgGlyPheAspGlyGluMet-501

 503-LeuSerAlaGluArgGlyTrpTyrTrpArgAsnAspLeuSerTrpGlnPheLysProGlyHis-523
 535-SerGlyGlnSerAlaLys-540
 572-ArgAlaLeuLysLysProGluPhePheGlnSerArgLysTrpAlaSerGly-588

Hydrophilic Regions - Hopp-Woods

34-AsnProAlaGluIleArgMetGlnGlnAspIleGlnGlnArgGlnArgGluGlnLeuArgGln-55

57-MetGlnProGluSerAspValArgLeuHisGlnLysAsnThrGlyGluThr-73
 78-MetGlyAspAspSerSerGln-84
 93-ValLeuGluGlyGluHisHisAla-100
 108-ArgAlaLeuArgGluThrGly-114
 152-GlnAspLeuAsnSerGlyLys-158
 171-IleArgIleAspArgSerAsnAspAspGlnThrHis-182
 193-PheProThrArgSerAsnAsp-199

 204-ArgAspLeuGluGlnGlyLeuGluAsnLeuLysArgLeuProThrAlaGluAlaAspLeu-223
 228-ValGluGlyGluProAsnGlnSer-235
 254-MetAspAsnSerGlySerGluAlaThrGly-263

 291-IleGlyGlyThrProAspGluGluSerPheAspGlyHisArgLysGluGlyGlySer-309
 345-TyrAspTyrAsnGly-349

 362-LeuTyrArgAspAlaLysArgLysThr-370
 377-TrpMetArgGluThrLysSerTyrIleAspAspAlaGluLeuThrValGlnArgArgLysThr-397
 413-SerThrAlaAspPheLysLeuLysTyrLysArgGlyThrGlyMetLysAspAlaLeuArgAlaProGluGlu
 AlaPheGly-439

 479-ProLeuThrSerGlnAspLysLeuAla-487

495-ArgGlyPheAspGlyGluMet-501

503-LeuSerAlaGluArg-507

572-ArgAlaLeuLysLysProGluPhePheGln-581

931-2

AMPHI Regions - AMPHI

43-LysAlaProLysThrValAlaAsnPheValArgTyrAlaArgLys-57

65-PheHisArgValIleAspGly-71

81-GluAspLeuAlaGlnLysAlaSerAspLys-90

94-AsnGluSerGlyAsnGlyLeuLysAsnThr-103

142-ThrValPheGlyArgValGluSerGlyMetAsnThrValSerLysIleAlaArgValLysThrAlaThrArg
GlyPhe-167

Antigenic Index - Jameson-Wolf

1-MetLysProLysPhe-5

30-ThrAspMetGlyAsn-34

38-ValLeuAspGluSerLysAlaProLysThr-47

53-ArgTyrAlaArgLysGlyPheTyrAspAspThrValPhe-65

76-GlyGlyGlyLeuThrGluAspLeuAlaGlnLysAlaSerAspLysAlaValAlaAsnGluSerGlyAsnGlyL
euLysAsnThrAla-104

110-AlaArgThrThrAlaProAspSerAlaThr-119

128-AspAsnAlaSerLeuAspTyrLysAsnGlyGlnTyr-139

145-GlyArgValGluSerGlyMetAsnThrVal-154

156-LysIleAlaArgValLysThrAlaThrArgGlyPhe-167

176-ValLysIleArgArg-180

Hydrophilic Regions - Hopp-Woods

1-MetLysProLysPhe-5

30-ThrAspMetGlyAsn-34

38-ValLeuAspGluSerLysAlaProLysThr-47

78-GlyLeuThrGluAspLeuAlaGlnLysAlaSerAspLysAlaValAlaAsnGluSerGlyAsnGlyLeuLysA
snThrAla-104

113-ThrAlaProAspSerAlaThr-119

130-AlaSerLeuAspTyrLysAsn-136

145-GlyArgValGluSerGlyMet-151

156-LysIleAlaArgValLysThrAlaThr-164

176-ValLysIleArgArg-180

932

AMPHI Regions - AMPHI

27-AspAlaAlaSerPheTrpGluLeuLysAsn-36

38-AlaAsnProTyrPro-42

46-SerAlaAlaLeuAspGlnTyrProSer-54

60-GlnLeuLysAspMetGlnGluCys-67

Antigenic Index - Jameson-Wolf

18-PheGlyGlyPheLysProAsnProTrpAsp-27

34-LeuLysAsnTyrAlaAsnProTyrProGlySer-44

50-AspGlnTyrProSerLysAlaArgArgArgGlnLeuLysAspMetGlnGluCysGlyTyrAspProIleAspG
lyGlyLysSerGluAlaAspAlaCysLeuArgLysLysGlyTrpCysArgLysGlyPheAspProTyrProGluAs
nLysLysTyrGluTrpProArgGluGluGlyLysThrLys-112

Hydrophilic Regions - Hopp-Woods

52-TyrProSerLysAlaArgArgArgGlnLeuLysAspMetGlnGluCysGlyTyrAspProIleAspGlyGlyL
ysSerGluAlaAspAlaCysLeuArgLysLysGlyTrpCys-89

91-LysGlyPheAspProTyrProGluAsnLysLysTyrGluTrpProArgGluGluGlyLysThrLys-112

933

AMPHI Regions - AMPHI

6-LysThrSerGluTyr-10
 37-GlnPheGluAsnIleAsnAsnSerLysLys-46
 61-GlyPheAlaArgGlyLeu-66
 75-ThrGluGluGlnIleArgLysTyrPheLysGluCysPheAsn-88
 94-ArgAspTyrSerThrCysGlnAla-101
 133-SerValGlyAsnTyrThrLysGluTrpAlaAsnGlnValIleHisHisIleGluAsnTyrValSerPheAlaAla
 HisLeuTyrSerGlyLeuAspProPheHisTyrIleGluVal-170
 261-GluAsnProIleAspAspLeuLysSerLeuAspGlyHisGlnIleIleLysValAsn-279
 308-GlyPhePheThrLys-312
 355-TrpLeuArgValIleAspGlyHisSerAsn-364
 373-ProValGluGlyTyrArgLysGly-380
 430-AlaGlyValTyrAlaThrTrpHis-437
 451-TrpMetGlnTyrGln-455
 466-GlyThrGluArgPheThr-471
 473-LysGlyIleThrAlaSer-478
 482-GlyTyrAsnAlaLeuLeuAla-488
 547-LeuTyrLysAsnIleAlaIleGlu-554
 556-PheAlaAlaValAsn-560
 605-PheAsnArgGlnThrGly-610

Antigenic Index - Jameson-Wolf

1-LysLeuAspAspLysThrSerGluTyrTrpLysLysGluThr-15
 19-ThrGluAspAsnProLysValProPro-27
 32-TyrProArgThrTyrGln-37
 39-GluAsnIleAsnAsnSerLysLysIleSer-48
 50-TyrAspGlnGluTyrThrGluGlyTyr-58
 67-GlyValAlaLysArgAsnGlyAspThrGluGluGlnIleArgLysTyrPheLys-84
 86-CysPheAsnSerAsnThrLysIleArgAspTyrSerThrCysGlnAlaGluLysPheGlySerHisPro-108
 118-LeuGlyProLysIleLysAsnSerHisIleAsnSerGluIle-131
 159-TyrSerGlyLeuAspPro-164
 169-GluValThrAspAsnSerHis-175
 184-AspGluPheArgLeuGluAsnSerLeuTrpGluProArgTrpAspSerAsnValGlyLysLeuLysThrThr
 AsnAlaAspIleArgPheAsnThrLysSerGluSerLeuLeuValLysGluAspTyrAlaGlyGlyAlaArgPheA
 rgPheAlaTyrAspProLysGluAlaLysAsn-243
 249-GluLysAsnValThrGlyThrSer-256
 259-IlePheGluAsnProIleAspLeuLysSerLeuAspGlyHisGlnIleIle-276
 278-ValAsnGlyThrAlaAspLysHisAlaPheArgLeuSerGlyLysHisGlnLysGly-296
 302-LeuGlnGlnArgProGluGlyPhe-309
 312-LysValGlnGluArgAspAspMet-319
 336-ArgLeuAsnAsnLysAsnSerAspIlePheAspArgThrLeuProArgLysGlyLeu-354
 359-IleAspGlyHisSerAsnGlnTrpValGlnGlyLysThrAlaProValGluGlyTyrArgLysGlyVal-38
 1
 391-GlnAsnGluSerAsnGlnLeu-397
 402-MetGlyGlyGlnAlaGluGlnArgSerThrPheHisAsnProAspThrAspAsnLeuThr-421
 423-GlyAsnValLysGly-427
 439-LeuGlnAspLysGlnThrGlyAlaTyrAlaAspSer-450
 455-GlnArgPheArgHisArgIleAsnThrGluAspGlyThrGluArgPheThrSerLysGlyIleThrAla-47
 7
 490-HisPheThrLysLysGlyAsnSerLeu-498
 513-ValAsnGlyLysPheSerAspSerGluAsnAla-523
 528-LeuGlySerArgGlnLeuGlnThr-535
 566-LysProPheGlyValGluMetAspGlyGluArgArgValIleAsnAsnLysThrAlaIleGluSer-587
 593-ValLysIleLysSer-597

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604-ThrPheAsnArgGlnThrGlyLysHisHisGlnAlaLysGlnGly-618

Hydrophilic Regions - Hopp-Woods

1-LysLysLeuArgAspLysThrSerGluTyrTrpLysLysGluThr-15
 20-GluAspAsnProLys-24
 42-AsnAsnSerLysLysIleSer-48
 67-GlyValAlaLysArgAsnGlyAspThrGluGluGlnIleArgLysTyrPheLys-84
 91-ThrLysIleArgAspTyrSer-97
 100-GlnAlaGluLysPheGly-105
 120-ProLysIleLysAsn-124
 184-AspGluPheArgLeuGlu-189
 195-ProArgTrpAspSerAsnValGlyLysLeuLysThrThrAsnAlaAspIleArgPheAsnThrLysSerGlu
 SerLeuLeuValLysGluAspTyrAlaGly-228
 236-TyrAspProLysGluAlaLysAsn-243
 250-LysAsnValThrGly-254
 262-AsnProIleAspAspLeuLysSerLeuAsp-271
 280-GlyThrAlaAspLysHisAlaPhe-287
 289-LeuSerGlyLysHisGlnLys-295
 303-GlnGlnArgProGluGlyPhe-309
 313-ValGlnGluArgAspAspMet-319
 337-LeuAsnAsnLysAsnSerAspIlePheAsp-346
 375-GluGlyTyrArgLysGlyVal-381
 392-AsnGluSerAsnGln-396
 405-GlnAlaGluGlnArgSerThrPheHis-413
 415-ProAspPheAspAsnLeuThr-421
 439-LeuGlnAspLysGlnThr-444
 455-GlnArgPheArgHisArgIleAsnThrGluAspGlyThrGluArgPheThrSer-472
 490-HisPheThrLysLysGlyAsnSer-497
 516-LysPheSerAspSerGluAsnAla-523
 568-PheGlyValGluMetAspGlyGluArgArgValIleAsn-580
 593-VallLysIleLysSer-597
 607-ArgGlnThrGlyLysHisHisGlnAlaLysGlnGly-618
935

AMPHI Regions - AMPHI

41-ValSerAspLysTrpAla-46
 56-AlaProArgValVal-60
 72-LeuGluHisSerLeuArgAsp-78
 87-LeuIleAlaSerLeuAlaAspLeuTyrAlaLysLeu-98
 111-AlaIeuleuAlaLysLeuAlaGlyArgProAlaGluAlaValAlaArgTyrArgGlu-129
 158-GluArgHisPheAlaGlu-163
 172-ProValLeuGluAsnValGlyArgPheArgLysLysThrGlu-185
 375-LysArgLeuGlyGluSerAlaThrValPheGlyGlyTrpGlnPheVal-390
 415-AlaGlyTrpAlaGlnGluTrpArgGlnLeuGlyGlyLeu-427
 435-TyrAlaArgArgAsnTyrLysGlyIleAlaAlaPhe-446

Antigenic Index - Jameson-Wolf

27-AlaIleLeuAspAspLysAlaLeu-34
 39-ArgSerValSerAspLysTrpAlaGluSerAspTrpLysValGluAsnAspAlaProArgValValAspGlyA
 spPhe-64
 70-LysMetLeuGluHisSerLeuArgAspAlaLeuAsnGlyAsnGln-84
 97-LysLeuProAspTyrAspAla-103
 108-ArgAlaArgAlaLeu-112
 116-LeuAlaGlyArgProAlaGluAlaValAlaArgTyrArgGluLeuHisGlyGluAsnAlaAlaAspGluArg
 IleLeu-141

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145-AlaAlaAlaGluPheAspAspPheArgLeuLysSerAlaGluArgHisPheAlaGluAlaAlaLysLeuAsp
Leu-169
176-AsnValGlyArgPheArgLysLysThrGluGly-186

192-PheSerGlyGlyIle-196
199-AlaValAsnArgAsnAlaAsnAsnAlaAla-208

210-GlnTyrCysArgGlnAsnGlyGlyArgGln-219
224-SerArgAlaGluArgAlaAla-230
236-IleGluAlaGluLysLeuThrProLeuAlaAsp-246
253-ArgSerAsnIleGlyGlyThrSerTyr-261

263-PheSerLysLysSerAlaTyrAspAspGlyPheGlyArg-275
279-GlyTrpGlnTyrLysAsnAlaArgGlnThr-288
300-SerGlySerAspGlyPheAspAlaLysThrLysArgValAsnAsnArgArgLeuProProTyr-320
332-HisThrTyrArgProAsnProGlyTrp-340
347-GluHisTyrArgGlnArgTyrArgGluGlnAspArgAlaGluTyrAsnAsnGlyArgGlnAspGlyPheTyr-
370
373-SerAlaLysArgLeuGlyGlu-379
392-PheValProLysArgGluThrVal-399
406-AlaAlaTyrArgArgAsnGlyValTyrAlaGly-416
425-GlyGlyLeuAsnSerArgValSerAlaSerTyrAlaArgArgAsnTyrLysGly-442
448-ThrGluAlaGlnArgAsnArgGluTrpAsn-457
463-SerHisAspLysLeuSerTyrLysGly-471
480-PheGlyArgThrGluSerAsnValProTyrAlaLysArgArgAsnSerGlu-496
501-AlaAspTrpArgPhe-505

Hydrophilic Regions - Hopp-Woods

27-AlaIleLeuAspAspLysAlaLeu-34
39-ArgSerValSerAspLysTrpAlaGluUserAspTrpLysValGluAsnAspAlaProArgValValAsp-61
70-LysMetLeuGluHisSerLeuArgAspAlaLeuAsn-81

108-ArgAlaArgAlaLeu-112
116LeuAlaGlyArgProAlaAlaValAlaArgTyrArgGluLeuHisGly-132
134-AsnAlaAlaAspGluArgIleLeu-141
145-AlaAlaAlaGluPheAspAspPheArgLeuLysSerAlaGluArgHisPheAlaGluAlaAlaLysLeuAsp
Leu-169
176-AsnValGlyArgPheArgLysLysThrGluGly-186

200-ValAsnArgAsnAlaAsn-205
212-CysArgGlnAsnGlyGlyArgGln-219
224-SerArgAlaGluArgAlaAla-230
236-IleGluAlaGluLysLeuThrPro-243

265-LysLysSerAlaTyrAspAspGlyPheGly-274
283-LysAsnAlaArgGlnThr-288
303-AspGlyPheAspAlaLysThrLysArgValAsnAsnArgArgLeuPro-318
348-HisTyrArgGlnArgTyrArgGluGlnAspArgAlaGluTyrAsnAsnGlyArgGlnAsp-367
373-SerAlaLysArgLeuGlyGlu-379
393-ValProLysArgGluThrVal-399
407-AlaTyrArgArgAsnGly-412
435-TyrAlaArgArgAsnTyrLys-441
449-GluAlaGlnArgAsnArgGluTrp-456
463-SerHisAspLysLeuSerTyr-469
480-PheGlyArgThrGluSer-485

489-TyrAlaLysArgArgAsnSerGlu-496

936-1

AMPHI Regions - AMPHI

10-ThrLeuIleAlaAlaIle-15

22-GlyCysValSerAlaVal-27

100-GlnPheValGlyGlnIle-105

112-AlaGluGlyValTyrAsnTyrIleThrValAlaSerLeuProArgThrAlaGlyAspIleAlaGlyAsp-134
4

Antigenic Index - Jameson-Wolf

1-MetLysProLysProHisThrVal-8

33-ValGlyAlaLysSerAlaValAspArgArgThrThrGlyAlaGlnThrAspAspAsnValMet-53

56-ArgIleGluThrThrAlaArgSerTyrLeuArgGlnAsnAsnGlnThrLysGlyTyr-74

94-AlaThrGluGlyGlnPhe-101

106-AlaArgSerGluGlnAlaAla-112

124-LeuProArgThrAlaGlyAspIleAlaGlyAspThrTrpAsnThrSerLysValArgAla-143

149-SerProAlaThrGlnAlaArgValLys-157

172-ThrProGluGluGlnAlaGlnIleThr-180

Hydrophilic Regions - Hopp-Woods

1-MetLysProLysProHisThr-7

37-SerAlaValAspArgArgThrThrGlyAlaGlnThrAspAspAsnValMet-53

56-ArgIleGluThrThrAla-61

68-AsnAsnGlnThrLysGlyTyr-74

94-AlaThrGluGlyGluLysGlnPhe-101

106-AlaArgSerGluGlnAlaAla-112

125-ProArgThrAlaGly-129

152-ThrGlnAlaArgValLys-157

172-ThrProGluGluGlnAlaGlnIle-179

937

AMPHI Regions - AMPHI

6-LeuProAlaLeuProAlaIleLeuProLeuSerThr-17

190-AsnGlySerLysThrLeuSer-196

Antigenic Index - Jameson-Wolf

27-AspIleMetThrAspLysGlyLysTrpLysLeuGluThr-39

44-LeuAsnSerGluAsnAsnArgAlaGluIle-53

72-GluIleGlnGluAsnGlySerAsnThrAsp-81

95-GlyAsnThrAspIleTyrGlySerGlySer-104

108-HisGluArgLysLeuAspGlyAsnSerLysThrArgAsnLysArgMetSerAsp-126

135-PheLeuLysAspAspLysAsnProAla-143

151-ThrValTyrGluLysSerArgAsnLysAlaSerSerGlyLysSer-165

187-TyrArgIleAsnGlySerLysThrLeuSerAspGlyIleArgTyrLysSerGlyAsnTyr-206

217-AlaAsnAspArgIleSerLeuThrGlyGly-226

231-GlyArgGlnProAspArgThrAspGlyLysArgGluSerSerArgAsnThrSerThr-249

273-ValSerGlyGlnSerSerSerGluLeuLysPhe-283

Hydrophilic Regions - Hopp-Woods

27-AspIleMetThrAspLysGlyLysTrpLysLeu-37

47-GluAsnAsnArgAlaGluIle-53

72-GluIleGlnGluAsnGlySerAsnThr-80

108-HisGluGluArgLysLeuAspGlyAsnSerLysThrArgAsnLysArgMetSerAsp-126

135-PheLeuLysAspAspLysAsnPro-142

151-ThrValTyrGluLysSerArgAsnLysAlaSerSer-162

193-LysThrLeuSerAspGlyIleArgTyrLysSer-203

217-AlaAsnAspArgIleSer-222
 232-ArgGlnProAspArgThrAspGlyLysArgGluSerSerArgAsnThr-247
 277-SerSerSerGluLeuLysPhe-283

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AMPHI Regions - AMPHI
 32-AlaThrValCysAla-36
 90-AspGlnAspIleLeu-94
 121-LysIleTyrArgGly-125
 135-CysMetSerCysHisGly-140
 151-SerGluIleGlnAlaTyrProArgLeuGlyGly-161
 169-GluGlnMetAsnAlaTyrLys-175
 185-GluAspIleAlaAsnArgMetSer-192

Antigenic Index - Jameson-Wolf
 18-AlaSerProLysAlaAspValGluLysGlyLysGlnVal-30
 40-AlaAlaAspGlyAsnSerGlyIle-47
 66-TleGlyIleArgAspGlyLysArgThrHisGlySerAlaAlaVal-80
 88-LeuSerAspGlnAspIle-93
 102-LysGlnGlnProLysSerGlyGluAlaAsnProLysGluAsnProGluLeuGly-119
 122-IleTyrArgGlyGlyLeuSerAspLysLysValPro-133
 139-HisGlyProSerGlyAlaGlyMetProGlyGlyGlySerGluIleGlnAla-155
 157-ProArgLeuGlyGlyGlnHisGln-164
 172-AsnAlaTyrLysSerGlyGlnArgLysAsnThrIleMetGluAspIleAlaAsnArgMetSerGluAspLeuLysAla-198

Hydrophilic Regions - Hopp-Woods
 18-AlaSerProLysAlaAspValGluLysGlyLysGlnVal-30
 40-AlaAlaAspGlyAsnSer-45
 67-GlyIleArgAspGlyLysArgThrHisGly-76
 89-SerAspGlnAspIle-93
 103-GlnGlnProLysSerGlyGluAlaAsnProLysGluAsnProGluLeuGly-119
 126-GlyLeuSerAspLysLysValPro-133
 175-LysSerGlyGlnArgLysAsnThrIleMetGluAspIleAlaAsnArgMetSerGluAspLeuLysAla-198
 950

AMPHI Regions - AMPHI
 33-GlyValHisLysSerAlaHisGly-40
 71-AlaThrValLysLysThrHisLysHisThrLysAla-82

Antigenic Index - Jameson-Wolf
 1-MetAsnLysAsnIle-5
 23-AlaAlaAsnLysProAlaSerAsnAlaThrGlyValHisLysSerAlaHisGlySerCysGlyAlaSerLysSerAlaGluGlySerCysGlyAlaAlaGlySerLysAlaGluGlySerLysAlaGluGlyLysCysGlyGluGlyLysCysGlyAlaThrValLysLysThrHisLysHisThrLysAlaSerLysAlaLysAlaLysSerAlaGluGlyLysCysGlyGluGlyLysCysGlySerLys-102

Hydrophilic Regions - Hopp-Woods
 23-AlaAlaAsnLysProAlaSer-29
 33-GlyValHisLysSerAlaHis-39
 43-GlyAlaSerLysSerAlaGluGlySerCys-52
 55-AlaGlySerLysAlaGlyGluGlyLysCysGlyGluGlyLysCys-69
 71-AlaThrValLysLysThrHisLysHisThrLysAlaSerLysAlaLysAlaLysSerAlaGluGlyLysCysGlyGluGlyLysCysGlySerLys-102
 951

AMPHI Regions - AMPHI

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9-LysMetLeuThrValLeuThrAla-16
 32-AspMetLysGlnProLysGluValGlyLysValPheArgLysGlnGlnArgTyr-49
 64-ValGlyGluArgValAsn-69

129-TrpArgGlnIleGluProIleProGlyLys-138
 157-HisLeuAspGlyLeuGluGluValLeuAla-166
 191-AlaGlnLysAlaSerLysAlaValArgArg-200
 206-GluHisLeuProGluAlaAla-212
 230-GlyAlaLeuGlnArgLeuAlaLysLeu-238
 256-LysTyrProGluIleLeuAspGlyPhePheGlu-266

280-MetGluIleMetAsnLeuValSerLeuHisArgLeuAspAspAla-294
 327-ValIleAspGlyTyrAlaGluLys-334

336-TyrGlyArgGlyThrGlu-341
 364-ValArgGlnTrpLeuLys-369
 397-AlaLeuArgGlnIleGlyArgValArgLysLeuProGluGlnGln-411
 418-AspAsnLeuSerLysIle-423

425-MetLeuAlaLeuSer-429
 436-GluAlaLeuArgGlyLeuAspLysIleIleGluLys-447
 479-SerAspLeuGluArgAlaPheArg-486
 497-AsnLeuGlyTyrSer-501
 565-HisLeuGlyGluVal-569
 581-AspValTrpThrGlnAla-586
 596-TrpArgGluThrLeu-600

Antigenic Index - Jameson-Wolf
25-AlaAlaGlyGlyGlyAlaGlyAspMetLysGlnProLysGluValGlyLysValPheArgLysGlnGlnArgTyrSerGluGluGluIleLysAsnGluArgAlaArgLeu-61

63-AlaValGlyGluArgValAsn-69
 79-ThrAlaLeuGlnLysGlyGlnAla-86
 98-GluArgThrLysSerProGluValAlaGluArgAlaLeuGlu-111
 128-LysTrpArgGlnIleGluProIleProGlyLysAlaGlnLysArgAlaGlyTrpLeuArgAsnValLeuArgGluArgGlyAsnGlnHisLeuAspGlyLeuGluGluValLeuAlaGlnAlaAspGluGlyGlnAsnArgArg-175
 185-ValGlnGlnAspGlyLeuAlaGlnLysAlaSerLysAlaValArgArgAlaAlaLeuLys-204
 221-GlnGlyArgGluLysGluAlaIle-229
 234-ArgLeuAlaLysLeuAspThrGluIleLeuPro-244
 252-LeuThrAlaArgLysTyrProGluIleLeuAspGlyPhePheGluGlnThrAspThrGlnAsn-272
 289-HisArgLeuAspAspAlaTyrAla-296
 302-LeuGluArgAsnProAsnAlaAsp-309
 319-AlaAsnArgLysGluGlyAlaSer-326
 330-GlyTyrAlaGluLysAlaTyrGlyArgGlyThrGluGluGlnArgSerArgAla-347
 355-TyrAlaAspArgArgAspTyrAlaLys-363
 366-GlnTrpLeuLysLysValSerAla-373
 377-LeuPheAspLysGlyVal-382
 389-ValGluLeuLeuAspGlyGlyArgAlaAlaLeu-398

400-GlnIleGlyArgValArgLysLeuProGluGlnGlnGlyArgTyrPheThr-416
 430-LysLeuProAspLysArgGluAlaLeuArgGlyLeuAspLysIleIleGluLysProProAlaGlySerAsnThrGluLeuGlnAla-458
 470-ArgLeuGlyLysArgLysLysMetIleSerAspLeuGluArgAlaPheArgLeuAlaProAspAsn-491
 504-ThrAspSerLysArgLeuAspGluGlyPhe-513
 522-IleAsnProAspAspThrAlaValAsnAspSerIle-533

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539-LeuLysGlyAspAlaGluSerAla-546
 551-ArgTyrSerPheGluAsnAspProGluProGluVal-562
 574-GlyGluArgAspGlnAla-579
 588-HisLeuThrGlyAspLysIleTrpArgGluThrLeuLysArgHisGlyIleAlaLeuProGlnProSer
 ArgLysProArgLys-616

Hydrophilic Regions - Hopp-Woods

29-GlyAlaGlyAspMetLysGlnProLysGluValGlyLysValPheArgLysGlnGlnArgTyrSerGluGluG
 luIleLysAsnGluArgAlaArgLeu-61

63-AlaValGlyGluArgValAsn-69
 79-ThrAlaLeuGlnLysGlyGlnAla-86
 98-GluArgThrLysSerProGluValAlaGluArgAlaLeuGlu-111
 135-IleProGlyLysAlaGlnLysArgAlaGlyTrp-145
 149-ValLeuArgGluArgGlyAsnGlnHis-157

159-AspGlyLeuGluGluValLeuAlaGlnAlaAspGluGlyGlnAsnArgArg-175
 189-GlyLeuAlaGlnIlysAlaSerLysAlaValArgArgAlaAlaLeuLys-204
 221-GlnGlyArgGluIlysGluLysAlaIle-229
 234-ArgLeuAlaLysLeuAspThrGluIle-242
 252-LeuThrAlaArgLysTyrProGluIle-260
 265-PheGluGlnThrAspThrGlnAsn-272
 289-HisArgLeuAspAspAlaTyrAla-296
 302-LeuGluArgAsnProAsn-307
 319-AlaAsnArgLysGluGlyAlaSer-326
 331-TyrAlaGlyLysAlaTyrGlyArgGlyThrGluGluGlnArgSerArgAla-347
 355-TyrAlaAspArgArgAspTyrAlaLys-363
 389-ValGluLeuAspGlyGlyArgAlaAlaLeu-398

400-GlnIleGlyArgValArgLysLeuProGluGlnGlnGly-412
 430-LysLeuProAspLysArgGluAlaLeuArgGlyLeuAspLysIleIleGluLysProProAla-450
 452-SerAsnThrGluLeuGlnAla-458
 470-ArgLeuGlyLysArgLysMetIleSerAspLeuGluArgAlaPheArgLeuAlaProAspAsn-491
 504-ThrAspSerLysArgLeuAspGlu-511
 523-AsnProAspAspThrAlaVal-529
 541-GlyAspAlaGluSer-545
 554-PheGluAsnAspProGluProGluVal-562
 574-GlyGluArgAspGlnAla-579
 590-ThrGlyAspLysIleTrpArgGluThrLeuLysArgHisGly-604
 609-GlnProSerArgLysProArgLys-616

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AMPHI Regions - AMPHI

63-SerValAlaThrLeuLeuAsnAsnPheTyrGlyGln-74
 81-ValLeuLysLysLeuAsp-86
 94-PheGluAspMetArgArgIle-100
 116-GluGlnLeuAlaGlnLeu-121
 138-SerValLeuArgGlyIleAsp-144
 163-AlaGlnPheLeuAspAla-168
 179-LysIleLeuAlaVal-183

Antigenic Index - Jameson-Wolf

40-GlnSerTrpLysAlaArgArgAspPheAsnIleValLysGlnAspLeuAspPheSerCys-59

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70-AsnPheTyrGlyGlnThrLeuThrGluGluGluLysLeuAspLysGluGlnMetArgAlaSerP
 heGluAspMetArgArgIleMetPro-102
 104-LeuGlyPheGluAlaLysGlyTyr-111
 129-LeuLysTyrArgLysAspAspHisPheSer-138
 141-ArgGlyIleaspGlyAsnThr-147
 169-TrpGlnThrArgGluGlyAsnLeuAla-177
 184-IleProLysLysAlaGluThrIleSer-192
 199-GlnHisProLysArgGlnThrGlu-206
 213-ArgGlnAlaArgAlaGlu-218

Hydrophilic Regions - Hopp-Woods

41-SerTrpLysAlaArgArgAspPheAsnIleValLysGlnAspLeuAspPhe-57
 76-LeuThrGluGluValLeuLysLysLeuAspLysGluGlnMetArgAlaSerPheGluAspMetArgArgI
 leMetPro-102
 104-LeuGlyPheGluAlaLysGly-110
 130-LysTyrArgLysAspAspHisPheSer-138
 169-TrpGlnThrArgGluGlyAsnLeu-176
 184-IleProLysLysAlaGluThrIleSer-192
 200-HisProLysArgGlnThrGlu-206
 213-ArgGlnAlaArgAlaGlu-218
953

AMPHI Regions - AMPHI

39-AsnThrSerThrAsnValGlyGlyPheTyrGlyLeuThr-51
 75-GlnSerGlySerGlnHisPheThrAspHisLeuLysSerAlaAspIlePheAspAlaAlaGln-95
 151-GlyAspPheSerThrThr-156

Antigenic Index - Jameson-Wolf

22-TyrLysValAspGluTyrHisAla-29
 38-PheAsnThrSerThrAsnVal-44
 54-ValGluPheAspGlnAlaLysArgAspGlyLysIleAspIle-67
 83-AspHisLeuLysSer-87
 95-GlnTyrProAspIleArgPheValSer-103
 105-LysPheAsnPheAsnGlyLysLysLeuValSer-115
 122-MetHisGlyLysThrAlaProValLysLeuLysAlaGluLys-135
 137-AsnCysTyrGlnSerProMetGluLysThrGluValCysGlyGlyAsp-152
 154-SerThrThrIleAspArgThrLysTrpGly-163
 174-LysSerValArgIle-17
 180-IleGlnIleGluAlaAlaLysGln-187

Hydrophilic Regions - Hopp-Woods

22-TyrLysValAspGluTyrHisAla-29
 54-ValGluPheAspGlnAlaLysArgAspGlyLysIleAspIle-67
 83-AspHisLeuLysSer-87
 108-PheAsnGlyLysLysLeuValSer-115
 125-LysThrAlaProValLysLeuLysAlaGluLys-135
 142-ProMetGluLysThrGluValCysGly-150
 155-ThrThrIleAspArgThrLysTrp-162
 174-LysSerValArgIle-178
 180-IleGlnIleGluAlaAlaLysGln-187
954

AMPHI Regions - AMPHI

48-ArgAlaAlaArgPheArg-53
 57-GlnGlyLeuGlyGlyAspPheGluArgPheLeuLysGly-69
 74-GlnGluAsnLeuAlaLysTyrArgGluAsnIle-84
 100-ProTyrArgValCysLysGlnAla-107

134-TyrGlnAsnTyrArgLysSerMetGlnGluCysArgLysThrIleThr-149

Antigenic Index - Jameson-Wolf
 17-GlyGlnGluGlnSerGlnLysAlaAspAlaGlu-27
 35-TyrGlnPheAlaAspGluLysGln-42
 58-GlyLeuGlyGlyAspPheGluArgPheLeuLysGlyGluIleProAsnGlnGluAsnLeuAlaLysTyrArgGluAsnIle-84
 92-AlaAspThrAsnGlyAspAspAspProTyrArgValCysLys-105
 107-AlaAlaGlnAspAlaGluIleLeuMet-115
 119-ValThrSerGlyGlyGlyGlyThrThrAspLeuAspLysGluSerTyrGlnAsnTyrArgLysSerMetGlnGluCysArgLysThrIleThrGluAlaGluAlaAsnLeuProLysLys-158

Hydrophilic Regions - Hopp-Woods
 17-GlyGlnGluGlnSerGlnLysAlaAspAlaGlu-27
 36-GlnPheAlaAspGluLysGln-42
 61-GlyAspPheGluArgPheLeuLys-68
 70-GluIleProAsnGlnGluAsnLeuAlaLysTyrArgGluAsnIle-84
 94-ThrAsnGlyAspAspAspProTyrArgValCysLys-105
 107-AlaAlaGlnAspAlaGluIleLeuMet-115
 125-GlyThrThrAspLeuAspLysGluSerTyrGlnAsnTyrArgLysSerMetGlnGluCysArgLysThrIleThrGluAlaGluAlaAsnLeuProLysLys-158
957

AMPHI Regions - AMPHI
 11-SerPhePheAlaLeuValPheAla-18
 39-AlaThrGluValProLysAsnPro-46
 48-AlaPheValAlaLysLeuAlaArgLeuPheArgAsnAla-60
 76-AsnLeuAlaGlyThrValAspAsp-83
 198-GluAspValTyrGluHisCysLeuGlyCysTyrGlnMet-210
 218-TyrArgAspValAlaAsnAspGlu-225
 235-SerAsnArgIleAlaSer-240
 249-GlnAsnMetArgGluLeuMetProArg-257
 335-GluLysGluValArgArgTyrAlaGluAlaAlaArg-367

Antigenic Index - Jameson-Wolf
 29-IleAsnProArgTrp-33
 35-LeuSerAspThrAlaThrGluValProLysAsnProAsn-47
 57-PheArgAsnAlaAspArgAla-63
 69-GluSerIleArgThrGluGluAsnLeuAlaGlyThrValAspAspGlyProLeuGlnSerGluLysAspTyr-92
 98-ArgLeuSerArgLeuLysGluLysAlaLys-107
 112-ThrGluGlnGluHisGlyLys-118
 125-HisIleGlyGluGlyGly-130
 136-LeuSerGlnArgSerProGluAlaPheVal-145
 149-TyrLeuTyrArgAsnAspArgProPheSer-158
 166-ValHisGlyLeuAsnTyrGluThrThrGlyGluTyrArgVal-179
 182-GlnProAspGlySerVal-187
 190-AlaAlaGlyArgGlyLysIleGlyGluAspValTyr-201
 217-LysTyrArgAspValAlaAsnAspGluGlnLysValTrpAspPheArgLysGluSerAsnArgIleAlaSerAspSerArgAsnSerValPheTyrGlnAsnMetArgGluLeuMetProArgGlyMetLysAlaAsnSer-263
 267-GlyTyrAspAlaAspGlyLeuProGlnLys-276
 280-SerPheAspAsnGlyLysLysArgGlnSerPheGluTyrTyrLeuLysAsnGlyAsn-298
 309-LeuLysGlaAspGlyValThr-315
 329-LeuAspGlyGlyArgIleValArgGluGluLysGlnGlyAspArgLeuProAspPhe-347
 352-GluAsnLeuGluLysGluValArgArgTyrAlaGluAlaAlaArgArgSerGlyGlyArgArgAspLeuSerHis-377

Hydrophilic Regions - Hopp-Woods

38-ThrAlaThrGluValProLysAsnPro-46
 57-PheArgAsnAlaAspArgAla-63
 69-GluSerIleArgThrGluGluAsnLeu-77
 80-ThrValAspAspGlyProLeuGlnSerGluLysAspTyr-92
 98-ArgLeuSerArgLeuLysGluLysAlaLys-107
 112-ThrGluGlnGluHisGlyLys-118
 136-LeuSerGlnArgSerProGlu-142
 151-TyrArgAsnAspArgProPhe-157
 169-GluAsnFyrGluThrThrGlyGluTyr-177
 190-AlaAlaGlyArgGlyLysIleGlyGluAspValTyr-201
 217-LysTyrArgAspValAlaAsnAspGluGlnLysValTrpAspPheArgLysGluSerAsnArgIleAlaSer
 AspSerArgAsn-244
 250-AsnMetArgGluLeuMetProArgGlyMetLys-260
 268-TyrAspAlaAspGlyLeuPro-274
 282-AspAsnGlyLysLysArgGlnSer-289
 309-LeuLysAlaAspGlyValThr-315
 331-GlyGlyArgIleValArgGluGluLysGlnGlyAspArgLeuPro-345
 352-GluAsnLeuGluLysGluValArgArgTyrAlaGluAlaAlaAlaArgArgSerGlyGlyArgArgAspLeu
 SerHis-377
958
AMPHI Regions - AMPHI
 34-AspAsnProThrAlaGlyGluSerValArgSerValSerGluProIleGln-50
 86-ProGluAspTyrThrArgIleValAlaAsp-95
 127-TyrAspGlnSerGlyAsp-132
 176-GlyArgArgLeuGlnSerValSerArgThrAlaGluMet-188
 343-IleSerAspThrLeuGln-348
 483-TyrTyrSerLeuAsnArgPhe-489
 491-SerGlnGluAlaLysArgVal-497
 500-ThrLeuProIleVal-504
 521-GlyGluValLeuGlnThrLeuGluProArgLeu-531
 541-GlnAsnAspLeuProAsnPheAsp-548
 572-AsnThrAlaAsnSerLeuSerAlaAlaValGlnSer-583
 616-ValGlyLysPro-620
 693-AspLysLeuSerGln-697
 723-LysLysProIleGlu-727
 769-AspLeuSerSerValGlyArgAsnPro-777

Antigenic Index - Jameson-Wolf

28-ValAlaAlaGluGluThrAspAsnProThrAlaGlyGluSerValArgSerValSerGluProIleGln-50
 55-SerLeuGlySerThr-59
 63-CysSerAsnGluSerGlySerProGluArgThrGluAlaAlaValGlnGlySerGlyGluAlaSerIleProG
 luAspTyrThrArgIleValAlaAspArgMetGluGlyGlnSerGlnValGlnValArgAlaGluGly-109
 111-ValValValGluArgAsnArgThrThrLeuAsn-121
 123-AspTrpAlaAspTyrAspGlnSerGlyAspArgThrValThrAlaGlyAspArgPheAlaLeuGlnGlnAspGly
 ThrLeuIleArgGlyGluThrLeu-154
 158-LeuGluGlnGlnThrGlyGluAlaHisAsnValArgMetGluIleGluGlnGlyGlyArgArgLeuGlnSer
 ValSerArgThrAlaGluMetLeuGlyGluGlyHisTyrLysLeuThrGluThrGlnPheAsnThrCysSerAlaG
 lyAspAlaGlyTrp-211
 216-AlaSerValGluIleAspArgGluLysGlyIleGly-227
 249-PheProLeuAspGlyAsnArgLysSerGlyLeu-259
 265-SerAlaGlySerAspGlyVal-271
 293-ValIleGlyGluArgGlyAlaValPheAspGlyGlnValArgTyrLeuArgProAspTyrAlaGlyGlnSer
 Asp-317

321-LeuProHisAspLysLysSerGlyArgAsnAsnArgTyrGlnAla-335
 337-TrpGlnHisArgHisAspIleSerAspThrLeu-347
 352-AspPheAsnGlnValSerAspSerGlyTyrTyrArgAspPheTyrGlyAsnLysGluIleAlaGlyAsnVal
 AsnLeuAsnArgArgValTrp-382
 384-AspTyrGlyArgAlaAlaGlyGlySerLeu-394
 407-AlaAsnGlnSerGlyTyrLysAspLysProTyr-417
 425-ValGluTrpArgLysAsnThrGlyArgAla-434
 444-ArgPheSerHisAspSerArgGlnAspGlySerArg-455
 460-ProAspIleLysTrpAspPheSerAsnSerTrpGly-471
 487-AsnArgPheGlySerGlnGluAlaArgArgValSerArg-499
 507-AspSerGlyIleThrPheGluArgAsnThrArgMetPheGly-520
 538-AlaLysSerGlnAsnAspLeuProAsnPheAspSerSerGluSerSerPheGly-555
 560-PheArgGluAsnLeuTyrTyrGlyAsnAspArgIleAsnThrAlaAsnSer-576
 581-ValGlnSerArgIleLeuAspGlyAlaThrGlyGluGluArgPheArgAlaGlyIleGlyGlnLysPheTyr
 PheLysAspAspAlaValMetLeuAspGlySerValGlyLysProArgAsnArgSerAspTrp-626
 631-SerGlySerIleGlySer-636
 642-SerSerIleHistyrAsnGlnAsnAspLysArgAlaGluAsn-655
 660-AlaSerTyrArgProAlaGlnGlyLysValLeuAsnAlaArgTyrLysTyrGlyArgAsnGluLysIleTyr
 LeuLysSerAspGlySerTyrPhe-691
 693-AspLysLeuSerGln-697
 718-TyrGlyPheGluAlaLysLysProIleGlu-727
 732-AlaGluTyrLysSerSerCysGlyCysTrp-741
 751-ValThrGlyGluAsnThrTyrLysAsn-759
 766-GlnLeuLysAspLeuSerSerValGlyArgAsnProAlaAspArgMetAspVal-783
 794-LeuSerAlaGlyArgAsnLysArgPro-802

Hydrophilic Regions - Hopp-Woods

28-ValAlaAlaGluGluThrAspAsnProThrAlaGlyGluSerValArgSerValSerGluProIleGln-50
 65-AsnGluSerGlySerProGluArgThrGluAlaAlaVal-77
 79-GlySerGlyGluAlaSerIleProGluAspTyrThr-90
 93-ValAlaAspArgMetGluGlyGlnSer-101
 103-ValGlnValArgAlaGluGly-109
 111-ValValValGluArgAsnArgThrThrLeu-120
 125-AlaAspTyrAspGlnSerGlyAspThrValThrAlaGlyAspArgPheAlaLeu-142
 147-ThrLeuIleArgGlyGluThr-153
 160-GlnGlnThrGlyGluAlaHisAsnValArgMetGluIleGluGlnGlyGlyArgArgLeuGlnSerValSer
 ArgThrAlaGluMetLeuGly-190
 192-GlyHisTyrLysLeuThrGlu-198
 216-AlaSerValGluAlaAspArgGluLysGlyIleGly-227
 250-ProLeuAspGlyAsnArgLysSerGly-258
 266-AlaGlySerAspGlyVal-271
 294-IleGlyGluArgGlyAlaVal-300
 305-ValArgTyrLeuArg-309
 323-HisAspLysLysSerGlyArgAsnAsnArgTyrGlnAla-335
 337-TrpGlnHisArgHisAspIleSerAsp-345
 410-SerGlyTyrLysAspLysProTyr-417
 425-ValGluTrpArgLysAsnThrGlyArgAla-434
 445-PheSerHisAspSerArgGlnAspGlySerArg-455
 490-GlySerGlnGluAlaArgArgValSerArg-499
 510-AlaThrPheGluArgAsnThrArg-517
 539-LysSerGlnAsnAsp-543
 548-AspSerSerGluSer-552
 569-AspArgIleAsnThr-573
 589-AlaThrGlyGluGluArgPheArgAla-597
 604-TyrPheLysAspAspAlaValMet-611

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615-SerValGlyLysLysProArgAsnArgSerAsp-625
 648-GlnAsnAspLysArgAlaGluAsn-655
 662-TyrArgProAlaGln-666
 674-TyrLysTyrGlyArgAsnGluLysIleTyrLeuLysSerAspGly-688
 720-PheGluAlaLysLysProIleGlu-727
 732-AlaGluIleTyrLysSer-736
 766-GlnLeuLysAspLeuSerSerValGlyArgAsnProAlaAspArgMetAspVal-783
 795-SerAlaGlyArgAsnLysArgPro-802
959

AMPHI Regions - AMPHI

56-AlaAlaLeuAlaArgValGlyGly-63

Antigenic Index - Jameson-Wolf

24-AlaHisHisAspGlyHisGlyAspAspAspAspHisGlyHis-36
 38-AlaHisGlnHisAsnLysGlnAspLysIleIleSer-49
 51-AlaGlnAlaGluLysAlaAlaLeu-58
 60-ArgValGlyGlyLysIleThrAspIleAspLeuGluHisAspAsnGlyArgProHisTyrAspValGluIleValLysAsnGlyGlnGluTyr-90
 94-ValAspAlaArgThrGlyArgValIleSerSerArgArgAspAsp-108

Hydrophilic Regions - Hopp-Woods

27-AspGlyHisGlyAspAspAspAspHisGlyHis-36
 40-GlnHisAsnLysGlnAspLysIleIleSer-49
 51-AlaGlnAlaGluLysAlaAlaLeu-58
 61-ValGlyGlyLysIleThrAspIleAspLeuGluHisAspAsnGlyArgProHisTyr-79
 82-GluIleValLysAsnGlyGlnGluTyr-90
 94-ValAspAlaArgThrGlyArg-100
 102-IleSerSerArgArgAspAsp-108
960

AMPHI Regions - AMPHI

24-AlaProArgLeuLeuProSerPheThrAspPro-34
 39-LeuSerAlaProGlyGlyTyrIleVal-47
 58-IleGluLysLeuAlaLysGlnProGluTyrAlaTyrLeuLysGlnLeuGlnValAlaLysAsnValAsn-80
 137-PheAlaSerLeuAlaSer-142
 154-AspValGlyLysThrLeuLysGluLeuGlyArgSerArgThr-167
 189-LeuAlaThrTrpSerGlu-194
 230-AsnIleLeuAlaAlaLeuValAsnThrAla-239
 245-SerLysIleLysGly-249
 257-HisLysIleAlaHisAlaValAlaGlyCysAla-267
 280-AlaIleGlyAlaAlaValGlyGluIleValGlyGlu-291
 314-IleThrAlaTyrAlaLys-319
 338-GlnThrAlaGlnAsnAla-343

345-GluAsnAsnAlaValLysAlaValValThr-354

359-ValTyrIleLysValAlaArgLysGly-366

387-AsnLeuAlaAspAsnLeuThrThrLeuPheAsp-397

418-AsnArgAlaAsnLysGlyGluAlaAlaGlnLysValLysGluValLeu-433

460-LysGlnLeuAlaGlnIle-465

Antigenic Index - Jameson-Wolf

11-LeuTyrArgArgGlySerValLysProProLeu-21

23-GluAlaProArgLeuLeuProSerPheThrAsp-33

35-ValValProLysLeuSerAlaProGly-43

48-AspIleProLysGlyAsnLeuLysThrGluIleGluLysLeuAlaLysGlnProGlu-66

77-LysAsnValAsnTrp-81

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87-AlaTyrAspLysTrpAspTyrLysGlnGluGlyLeuThr-99
 150-AsnAsnLysGlyAspValGlyLysThrLeuLysGluLeuGlyArgSerArgThrValLys-169
 180-ValSerAsnLysLeuGlyAla-186

193-SerGluThrProTrp-197
 218-ValAsnGlyGlySerLeuLysAspAsnLeuGlu-228
 239-AlaHisGlyGluAlaAlaSerLysIleLysGlyLeuAsp-251
 270-AlaAlaAsnLysGlyLysCysGlnAspGlyAla-280
 292-AlaLeuValLysAsnThrAspPheSerAspMetThrProGluGlnLeuAspLeuGluValLysLys-313
 329-ThrGlyGlyAspValAsnThr-335
 362-ValAlaArgLysGlyLeuLysAsnGlyLysIleAsnValArgAspLeuLysGlnThrLeuLysAspGluGly
 TyrAsnLeu-388

398-GluThrLeuAspTrpAsnAspAlaLysAla-407
 415-ThrGluLeuAsnArgAlaAsnLysGlyGluAlaAlaGlnLysValLysGluValLeuGluLysAsnArgPro
 TyrIleProAsnLysGlyAlaValPro-447
 451-ThrTyrMetLysAsnAsnProPheGlyLysGln-461
 465-IleSerGluLysThrThrLeuProThrGlnGlnGlyGlnSer-478
 483-LysArgAsnGlnGlyLeuLeuLysThrGlyAspArgPheTyrLeuAspGlyGlnHisLysAsnHisLeu-50
 5

507-ValPheAspLysAsnGlyAsnPheLys-515
 520-MetAspGlySerLeuAsnGlnMetLysThrGlyAlaAlaLysGlyArgLysLeuAsnLeu-539

Hydrophilic Regions - Hopp-Woods

13-ArgArgGlySerValLys-18

49-IleProLysGlyAsnLeuLysThrGluIleGluLysLeuAlaLysGlnProGlu-66
 89-AspLysTrpAspTyrLysGlnGluGlyLeuThr-99
 150-AsnAsnLysGlyAspValGlyLysThrLeuLysGluLeuGlyArgSerArgThrValLys-169
 221-GlySerLeuLysAspAsnLeuGlu-228
 239-AlaHisGlyGluAlaAlaSerLysIleLysGlyLeuAsp-251
 270-AlaAlaAsnLysGlyLysCysGlnAsp-278

292-AlaLeuValLysAsnThrAspPheSerAspMetThrProGluGlnLeuAspLeuGluValLysLys-313
 362-ValAlaArgLysGlyLeuLysAsnGlyLysIleAsnValArgAspLeuLysGlnThrLeuLysAspGluGly
 TyrAsn-387
 398-GluThrLeuAspTrpAsnAspAlaLysAla-407
 416-GluLeuAsnArgAlaAsnLysGlyGluAlaAlaGlnLysValLysGluValLeuGluLysAsnArgPro-43
 8

465-IleSerGluLysThrThrLeu-471
 483-LysArgAsnGlnGly-487
 499-GlyGlnHisLysAsnHis-504
 507-ValPheAspLysAsnGlyAsn-513
 522-GlySerLeuAsnGln-526

528-LysThrGlyAlaAlaLysGlyArgLysLeuAsnLeu-539

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AMPHI Regions - AMPHI

6-PheProSerLysVal-10
 13-ThrAlaIleLeuAlaThrPheCysSerGly-22
 46-AsnGlyGlnGluIleAsnGlyPheLysAlaGlyGluThrIleTyrAspIle-62

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90-LysValValThrAsnLeuThrLysThrVal-99
 118-GluLysLeuThrThr-122
 138-LeuAspGluThrThrAsnAlaLeuAsnLysLeuGlyGluAsnIleThrThrPheAla-156
 170-LeuGluAlaValAlaAspThrValAspLysHisAlaGluAlaPheAsnAspIleAlaAspSerLeuAsp-19
 2
 200-GluAlaValLysThrAlaAsnGluAlaLysGlnThrAlaGlu-213
 273-AlaArgIleAspSerLeuAspLysAsnValAlaAsnLeuArgLysGluThrArgGlnGlyLeu-293
 300-SerGlyLeuPheGlnProTyrAsnVal-308

Antigenic Index - Jameson-Wolf

27-ThrSerAspAspAspValLysLysAlaAla-36
 45-AsnAsnGlyGlnGluIleAsnGlyPheLysAlaGlyGluThr-58
 60-TyrAspIleGlyGluAspGlyThrIleThrGlnLysAspAlaThrAlaAlaAspValGluAlaAspAspPheLys-84
 98-ThrValAsnGluAsnLysGlnAsnValAspAlaLysValLysAlaAlaGluSerGluIleGluLysLeuThrThrLysLeuAlaAspThrAspAlaAlaLeuAlaAspThrAspAlaAlaLeuAspGluThrThrAsnAlaLeuAsnLysLeuGlyGluAsnIleThr-153
 155-PheGluAlaGluThrLysThrAsnIleValLysIleAspGluLysLeuGluAlaValAlaAspThrValAspLysHisAlaGluAlaPheAsnAspIleAlaAspSerLeuAspGluThrAsnThrLysAlaAspGluAlaValLysThrAlaAsnGluAlaLysGlnThrAlaGluGluGluThrLysGlnAsnValAspAlaLysValLysAlaAlaGluThrAlaAlaGlyLysAlaGluAlaAlaAla-237
 239-ThrAlaAsnThrAlaAlaAspLysAlaGluAlaValAla-251
 253-LysValThrAspIleLysAlaAspIleAlaThrAsnLysAlaAspIleAlaLysAsnSerAlaArgIleAspSerLeuAspLysAsnValAlaAsnLeuArgLysGluThrArgGlnGlyLeuAla-294
 317-ValGlyGlyTyrLysSerGluSer-324
 330-ThrGlyPheArgPhe-334
 348-ThrSerSerGlySerSerAla-354

Hydrophilic Regions - Hopp-Woods

27-ThrSerAspAspValLysLysAlaAla-36
 54-LysAlaGlyGluThr-58
 62-IleGlyGluAspGlyThrIleThrGlnLysAspAlaThrAlaAlaAspValGluAlaAspAspPheLys-84
 98-ThrValAsnGluAsnLysGlnAsnValAspAlaLysValLysAlaAlaGluSerGluIleGluLysLeuThrThrLysLeuAlaAspThrAspAlaAlaLeuAlaAspThrAspAlaAlaLeuAspGluThrThrAsnAla-144
 155-PheAlaGluGluThrLysThrAsnIleValLysIleAspGluLysLeuGluAlaValAlaAspThrValAspLysHisAlaGluAlaPheAsnAspIleAlaAspSerLeuAspGluThrAsnThrLysAlaAspGluAlaValLysThrAlaAsnGluAlaLysGlnThrAlaGluGluGluThrLysGlnAsnValAspAlaLysValLysAlaAlaGluThrAlaAlaGlyLysAlaGluAlaAlaAla-237
 242-ThrAlaAlaAspLysAlaGluAlaValAla-251
 253-LysValThrAspIleLysAlaAspIleAlaThrAsnLysAlaAspIleAlaLysAsnSerAlaArgIleAspSerLeuAspLysAsnValAlaAsnLeuArgLysGluThrArgGlnGlyLeuAla-294
 320-TyrLysSerGluSer-324
972-2

AMPHI Regions - AMPHI

15-SerSerGluArgMetSerGluValGluTyrPheSerHis-27
 63-ArgLysLeuGluGluIleLeuGly-90
 100-ArgGlyAsnLysPheTyrGluSerMetTyrArgLeu-111
 154-LeuAspAspSerIleArg-159
 226-PheValArgValTyrGluLysGly-233
 275-IleCysArgLysPheLysAsnMetProValPro-285
 308-AsnAlaValGlyLysLeuValAsnPhi-316
 326-GluIleValGluSerLeuLysAla-333
 336-GlyPheProLysGlyLeuGlu-342
 348-LeuGluMetLeuArgAspGlyLeuLys-356
 382-AsnSerAspLysPheAspArg-388

Antigenic Index - Jameson-Wolf

1-LeuThrAsnArgGlyGlyAlaLysLeuLysThrAsnSerLysSerSerGluArgMetSerGlu-21
 29-IleSerAspGlyLysGlyLysLeuLeuGluIleProGlnArgArgGlyLysGlnAspGlyVal-49
 62-ThrLeuLeuLysValSerGly-68
 83-ArgLysLeuGluGlu-87
 93-IleThrArgLysCysLysSerArgGlyAsnLysPheTyrGlu-106
 108-MetTyrArgLeuGlySerAspAspValAspTyrGly-119
 122-HisPheGlyGlyGlnArgAsnThrVal-130
 134-LeuLysGlyThrGlyCys-139
 152-GlnPheLeuAspAspSerIleArgThrArgIleThrArg-164
 172-PheAspGlyGluTyrThrProAspGlnAlaLeuLeuAspHisAspAsnGlyPhePheAspAsnSerAsnGln
 ArgProLysSerGluThrIleGly-203
 205-AlaTrpArgAsnGluAspGlySerGlyLys-214
 217-TyrValGlyArgLysLysAsnSerArgPhe-226
 228-ArgValTyrGluLysGlyArgGlnLeuGlyAspLysGluSerLysTrpVal-244
 251-AsnTyrGlyAspIleGluIle-257
 263-IleAsnGlnGlySer-267
 275-IleCysArgLysPheLysAsnMetProValProGluArgPheAspGlnArgLysLysLeu-295
 321-GlyPheAspAsnSerGluIleValGluSerLeuLysAlaAspSerGlyPheProLysGlyLeuGluProGlu
 LysTyrAla-347
 350-MetLeuArgAspGlyLeuLys-356
 361-HisGluGlnProAspIleAspLeuGluIleGluLeuAspGlu-374
 380-PheLysAsnSerAspLysPheAspArgGluLysArgLeuPheSerProAspTyrAspValGluLysGluArg
 LysTyrGlnGluTyrLeu-409
 417-ValAspTyrAspTyrPhe-422

Hydrophilic Regions - Hopp-Woods
 1-LeuThrAsnArgGlyGlyAlaLysLeuLysThrAsnSerLysSerSerGluArgMetSerGlu-21
 30-SerAspGlyLysGlyLysLeuLeuGluIleProGlnArgArgGlyLysGlnAspGlyVal-49
 83-ArgLysLeuGluGlu-87
 93-IleThrArgLysCysLysSerArgGlyAsnLysPheTyr-105
 111-LeuGlySerAspAspValAspTyrGly-119
 134-LeuLysGlyThrGly-138
 152-GlnPheLeuAspAspSerIleArgThrArgIleThrArg-164
 181-AlaLeuLeuAspHisAspAsnGlyPhe-189
 193-SerAsnGlnArgProLysSerGluThrIle-202
 206-TrpArgAsnGluAspGlySerGly-213
 219-GlyArgLysLysAsnSerArgPhe-226
 228-ArgValTyrGluLysGlyArgGlnLeuGlyAspLysGluSerLysTrpVal-244
 277-ArgLysPheLysAsn-281
 283-ProValProGluArgPheAspGlnArgLysLysLeu-295
 321-GlyPheAspAsnSerGluIleValGluSerLeuLysAlaAspSerGlyPhe-337
 339-LysGlyLeuGluProGluLysTyrAla-347
 350-MetLeuArgAspGlyLeuLys-356
 362-GluGlnProAspIleAspLeuGluIleGluLeuAspGlu-374
 381-LysAsnSerAspLysPheAspArgGluLysArgLeuPhe-393

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396-AspTyrAspValGluLysGluArgLysTyrGlnGluTyrLeu-409
973-2

AMPHI Regions - AMPHI
 12-GluArgLeuIleAlaArgLeuAlaArgGluProAspSerAlaGluAspValLeuAsnLeuLeuArgGlnAla-
 35
 44-AspThrLeuLeuArgLeuGluLysValLeuAspPhe-55
 77-AspSerIleGluArgIleThrAlaTyr-85
 112-AspLeuLeuIlysTyrMet-117
 143-AlaIleLeuIlysGluPheArgGluGln-151
 171-PheGluAspIleIleGluGlnIleValGlyGluIleGluAsp-184
 194-AsnIleHisIlaVal-198
 208-AlaIthrGluIleGluAspIleAsnThrPhe-217
 235-IleGlnGluLeuGly-239

Antigenic Index - Jameson-Wolf
 1-MetAspGlyAlaGlnProLysThrAsnPhe-10
 18-LeuAlaArgGluProAspSerAlaGluAspVal-28
 34-GlnAlaHisGlnGlnGluValPheAspAlaAspThr-45
 47-LeuArgLeuGluLysValLeuAsp-54
 56-SerAspLeuGluValArgAspAlaMetIleThrArgSerArgMetAsnValLeuLysGluAsnAspSerIleG
 luArg-81
 96-ValIleGlyGluAspLysAspGluVal-104
 118-PheAsnProGluGlnPheHis-124
 136-ProGluGlyLysSer-140
 146-LysGluPheArgGluGlnArgAsnHis-154
 159-IleAspGluTyrGlyGlyThrSerGly-167
 178-IleValGlyGluIleGluAspGluPheAspGluAspAspSerAlaAspAsn-194
 199-SerSerGluArgTrpArg-204
 209-ThrGluIleGluAspIleAsn-215
 218-PheGlyThrGluTyrSerSerGluGluAlaAspThr-229
 239-GlyHisLeuProValArgGlyGluLysValLeu-249
 258-AlaArgAlaAspAsnArgArgLeuHis-266

Hydrophilic Regions - Hopp-Woods
 1-MetAspGlyAlaGlnProLys-7
 18-LeuAlaArgGluProAspSerAlaGluAspVal-28
 34-GlnAlaHisGlnGlnGluValPheAsp-42
 47-LeuArgLeuGluLysValLeuAsp-54
 56-SerAspLeuGluValArgAspAlaMetIleThrArgSerArgMetAsnValLeuLysGluAsnAspSerIleG
 luArg-81
 96-ValIleGlyGluAspLysAspGluVal-104
 136-ProGluGlyLysSer-140
 146-LysGluPheArgGluGlnArgAsn-153
 178-IleValGlyGluIleGluAspGluPheAspGluAspAspSerAlaAspAsn-194
 199-SerSerGluArgTrpArg-204
 209-ThrGluIleGluAsp-213
 222-TyrSerSerGluGluAlaAspThr-229
 243-ValArgGlyGluLysValLeu-249
 258-AlaArgAlaAspAsnArgArgLeuHis-266
981-2

AMPHI Regions - AMPHI
 33-AlaAsnProAspLysValTyrArgValAlaSer-43
 48-AlaProPheGluSerLeuAsp-54
 68-AsnAlaMetAlaLys-72
 134-LysValSerSerSerGluAspLeuLysAsnMetAsnLysValGlyValVal-150

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169-LysIleAlaArgPheGlu-174
 183-LeuGluAsnGlyGlyLeuAspSerValVal-192
 199-AlaAsnTyrValLysAsnAsnPro-206
 209-GlyMetAspPheValThrLeuPro-216
 235-ValLysMetLeuAsnAspAlaLeuGluLysValArgGluSerGlyGluTyr-251

Antigenic Index - Jameson-Wolf

21-CysGlyGlyGlnGlyLysAspThrAlaAla-30
 33-AlaAsnProAspLysValTyrArg-40
 51-GluSerLeuAspSerLysGlyAsnValGluGlyPheAsp-63
 78-IleGluPheHisGlnProTrpAspSer-87
 92-LeuAsnAsnGlyAspAlaAspVal-99
 106-IleThrAspAspArgLysGlnSerMetAspPheSerAspProTyrPhe-121
 129-ValProGlyLysLysValSerSerGluAspLeuLysAsnMetAsnLys-146
 162-LeuLeuGlyAsnAspAlaProLysIleAlaArg-172
 181-LysCluleucluAsnGlyGlyLeuAspSerValValSerAspSerAla-196
 203-LysAsnAsnProAlaLysGlyMetAspPhe-212
 216-ProAspPheThrThr-220
 227-ValArgLysGlyAspGluIlaThrVal-235
 237-MetLeuAsnAspAlaIeuGluLysValArgGluSerGlyGluTyrAspLysIleTyr-255
 259-PheAlaLysGluAspGlyGlnAlaAlaLys-268

Hydrophilic Regions - Hopp-Woods

23-GlyGlnGlyLysAspThrAlaAla-30
 33-AlaAsnProAspLysValTyrArg-40
 51-GluSerLeuAspSerLysGlyAsnValGluGlyPheAsp-63
 93-AsnAsnGlyAspAlaAspVal-99
 106-IleThrAspAspArgLysGlnSerMetAspPheSer-117
 130-ProLysGlyLysLysValSerSerGluAspLeuLysAsnMetAsn-145
 166-AspAsnProLysIleAlaArg-172
 181-LysGluLeuGluAsnGlyGlyLeu-188
 205-AsnProAlaLysGlyMetAsp-211
 227-ValArgLysGlyAspGluAlaThrVal-235
 237-MetLeuAsnAspAlaIeuGluLysValArgGluSerGlyGluTyrAspLysIleTyr-255
 259-PheAlaLysGluAspGlyGlnAlaAlaLys-268

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AMPHI Regions - AMPHI

12-ValArgGlnLysMetValAsnGlyValAsnIleLeuAlaAsnAlaVal-27
 71-AlaGlnMetValLysGluValAlaSerLysThr-81
 100-ValAlaGluGlyMetLysTyr-106
 115-AspLeuLysArgGlyIleAspLysAlaValAlaAlaLeuValAspGluLeuLysAsnIleAlaLysProCys
 AspThrSerLysGluIleAlaGlnValGlySer-149
 160-AlaIleIleIleAlaGluAlaMetGluLysValGly-170
 185-AsnGluLeuAspValValGluGlyMet-193
 209-GluLysGlnIleAlaAla-214
 227-IleSerAsnIleArgAspLeuLeuProValLeuGluGlnValAlaLysAla-243
 265-AsnAsnIleArgGlyIleIleLeuLysThrValAla-275
 313-ThrLeuAspAspLeuGlyGlnAlaLysArgIle-323
 331-ThrIleIleAspGlyPheGlyAspAlaAla-340
 367-GluArgValAlaLysLeuAlaGlyGlyVal-376
 426-LeuGluAsnLeuIleHisThr-431
 444-LeuArgAlaValGluSerProLeuArgGlnIleValAlaAsnAla-458
 484-GluTyrGlyAspMetIleGluMet-491
 500-ThrArgSerAlaLeu-504

Antigenic Index - Jameson-Wolf

1-MetAlaAlaLysAspValGlnPhe-8
 10-AsnGluValArgGlnLysMetValAsn-18
 30-ThrLeuGlyProLysGlyArgAsnValVal-40
 43-AlaPheGlyGlyProHisIleThrLysAspGlyValThrValAlaLysGluIleGluLeuLysAspLysPheG
 luAsnMetGly-70
 73-MetValLysGluValAlaSerLysThrAsnAspValAlaGlyAspGlyThrThr-90
 112-AsnProThrAspLeuLysArgGlyIleAspLysAlaVal-124
 129-AspGluLeuLysAsnIleAlaLysProCysAspThrSerLysGluIleAla-145
 150-IleSerAlaAsnSerAspGluGlnVal-158
 164-GluAlaMetGluLysValGlyLysGluGlyValIleThrValGluAspGlyLysSerLeuGluAsnGluLeu
 AspVal-189
 193-MetGlnPheAspArgGlyTyr-199
 207-AspAlaGluLysGlnIleAla-213
 223-PheAspLysIleSerAsnIleArgAsp-232
 239-GlnValAlaLysAlaSerArg-245
 252-GluAspValGluGlyGluAla-258
 266-AsnIleArgGlyIleLeu-271
 278-AlaProGlyPheGlyAspArgArgLysAlaMetLeu-289
 303-GluGluValGlyLeuSerLeuGluLysAlaThrLeuAspAspLeuGlyGlnAlaLysArgIleGluIleGly
 LysGluAsnThrThr-331
 334-AspGlyPheGlyAspAlaAlaGlnIleGluAlaArgValAlaGluIleArgGlnGlnIleGluThrAlaThr
 SerAspTyrAspLysGluLysLeuGlnGluArgValAlaLysLeuAlaGly-374
 385-ThrGluValGluMetLysAsnLysAspArgValGluAspAlaLeuHis-401
 405-AlaAlaValGluGluGlyVal-411
 421-ArgAlaArgAlaAlaLeu-426
 430-HisThrGlyAsnAlaAspGlnAspAlaGlyVal-440
 446-AlaValGluSerProLeuArg-452
 455-ValAlaAsnAlaGlyGlyGluProSerVal-464
 469-ValLeuGluGlyLysGlyAsnTyrGlyTyr-478
 480-AlaGlySerGlyTyrGlyAspMetIleGlu-490
 495-AspProAlaLysValIleThrArgSerAlaLeu-504
 523-GluIleProGluAspLysProAlaValProAspMetGlyGly-536

Hydrophilic Regions - Hopp-Woods

1-MetAlaAlaLysAspValGlnPhe-8
 10-AsnGluValArgGlnLysMet-16
 33-ProLysGlyArgAsnValVal-40
 48-HisIleThrLysAspGlyValThrValAlaLysGluIleGluLeuLysAspLysPheGluAsn-68
 73-MetValLysGluValAlaSerLysThrAsnAspValAlaGlyAspGlyThrThr-90
 114-ThrAspLeuLysArgGlyIleAspLysAlaVal-124
 129-AspGluLeuLysAsnIleAlaLysProCysAspThrSerLysGluIleAla-145
 152-AlaAsnSerAspGluGlnVal-158
 164-GluAlaMetGluLysValGlyLysGluGlyValIleThrValGluAspGlyLysSerLeuGluAsnGluLeu
 AspVal-189
 207-AspAlaGluLysGlnIleAla-213
 223-PheAspLysIleSerAsnIleArgAsp-232
 239-GlnValAlaLysAlaSerArg-245
 252-GluAspValGluGlyGluAla-258
 280-GlyPheGlyAspArgArgLysAlaMetLeu-289
 303-GluGluValGlyLeuSerLeuGluLysAlaThrLeuAspAspLeuGlyGlnAlaLysArgIleGluIleGly
 LysGluAsnThrThr-331
 340-AlaGlnIleGluAlaArgValAlaGluIleArgGlnGlnIleGluThrAlaThrSerAspTyrAspLysGlu
 LysLeuGlnGluArgValAlaLys-371
 385-ThrGluValGluMetLysGluLysLysAspArgValGluAspAlaLeuHis-401

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405-AlaAlaValGluGluGlyVal-411
 421-ArgAlaArgAlaAlaLeu-426
 433-AsnAlaAspGlnAspAla-438
 446-AlaValGluSerProLeu-451
 458-AlaGlyGlyGluPro-462
 469-ValLeuGluGlyLysGly-474
 481-GlySerGlyGluTyrGlyAsp-487
 495-AspProAlaLysValThrArg-501
 523-GluIleProGluAspLysProAlaVal-531
986-2

AMPHI Regions - AMPHI

6-GlnTyrLeuAlaLeuAla-11
 18-LeuAlaGlyCysAspLysAlaGly-25
 36-SerPheValGluArgIleGluHis-43
 55-ProAspPheAlaGlnLeuValGln-62
 99-PheTyrGluPhePheLysArgLeuValProAsnMetProGluIleProGln-115
 145-ThrGlyMetGlySerIle-150
 162-AlaLysLeuIleGlySerAspVal-169
 189-IleGlyAsnProLysAspLeuLysProGly-198
 200-TrpValAlaAlaIleGly-205
 287-AlaGluGlnLeuLysAsnThrGlyLysVal-296
 393-AlaAlaGluHisIleGlyAlaSer-400
 471-ArgLysAlaMetAspLysAla-477

Antigenic Index - Jameson-Wolf

1-ValPheLysLysTyr-5
 20-GlyCysAspLysAlaGly-25
 29-GlyAlaAspLysLysGluAlaSerPheValGluArgIleGluHisThrLysAspAspGlySerVal-50
 61-ValGlnSerGluGlyProAla-67
 75-ProAlaProArgThrGlnAsnGlySerGlyAsnAlaGluAsnAspSerAspProIleAlaAspAsnAspPro-
 he-99
 104-LysArgLeuValProAsnMetProGluIleProGlnGluGluAlaAspAspGlyGlyLeu-123
 130-IleIleSerLysAspGlyTyr-136
 154-LeuAsnAspLysArgGluTyrThr-161
 165-IleGlySerAspValGlnSerAspValAla-174
 179-AspAlaThrGluGluLeuPro-185
 189-IleGlyAsnProLysAspLeuLysProGlyGlu-199
 208-PheGlyPheAspAsnSerVal-214
 219-ValSerAlaLysGlyArgSerLeuProAsnGluSerTyr-231
 242-AsnProGlyAsnSerGlyGlyPro-249
 265-TyrSerArgSerGlyGly-270
 288-GluGlnLeuLysAsnThrGlyLysValGlnArgGlyGlnLeu-301
 316-PheGlyLeuAspLysAlaGlyGly-323
 330-LeuProGlySerProAlaGluArgAlaGlyLeuGlnAlaGlyAsp-344
 349-LeuAspGlyGlyIleArgSerSerGlyAspLeu-360
 368-ThrProGlyLysGluValSer-374
 378-TrpArgLysGlyGluGluIleThrIle-386
 397-IleGlyAlaSerSerLysThrAspGluAlaProTyrThrGluGlnGlnSerGlyGlyThrPhe-416
 427-ThrHisThrAspSerSerGlyGly-434
 440-ArgValSerAspAlaAlaGluArgAlaGlyLeuArgArgGlyAspGluIleLeu-457
 463-ProValAsnAspGluAlaGlyPheArgLysAlaMetAspLysAlaGlyLysAsnVal-481
 486-MetArgArgGlyAsnThr-491

Hydrophilic Regions - Hopp-Woods

20-GlyCysAspLysAlaGly-25

29-GlyAlaAspLysLysGluAlaSerPheValGluArgIleGluHisThrLysAspAspGlySer-49
 75-ProAlaProArgThrGlnAsnGlySerGlyAsnAlaGluAsnAspSerAspProIleAlaAspAsnAspPro-
 98
 111-ProGluIleProGlnGluGluAlaAspAspGlyGly-122
 131-IleSerLysAspGly-135
 154-LeuAsnAspLysArgGluTyrThr-161
 179-AspAlaThrGluGluLeuPro-185
 190-GlyAsnProLysAspLeuLysPro-197
 221-AlaLysGlyArgSerLeuPro-227
 288-GluGlnLeuLysAsnThrGlyLysValGlnArgGlyGln-300
 317-GlyLeuAspLysIleGly-322
 333-SerProAlaGluArgAlaGlyLeuGln-341
 350-AspGlyGlyGluIleArgSerSerGlyAsp-359
 368-ThrProGlyLysGluValSer-374
 379-ArgGlyGluGluIleThrIle-386
 397-IleGlyAlaSerSerLysThrAspGluAlaProTyrThrGluGlnGlnSer-413
 428-HisThrAspSerSerGly-433
 440-ArgValSerAspAlaAlaGluArgAlaGlyLeuArgArgGlyAspGluIleLeu-457
 463-ProValAsnAspGluAlaGlyPheArgLysAlaMetAspLysAlaGlyLys-479
987
AMPHI Regions - AMPHI
 17-CysSerSerTrpLeu-21
 33-PheAsnThrSerLysProValArgLeuAspAsnIleLeuGlnIle-47
 65-ProHisGluAlaPhe-69
 144-AsnProPheValLeuArgLysTrpArgAlaLeuGlyTyrLeuThrAspPheProArgLeuAsnArg-165
 187-GlyAspGluTyrPheLysVal-193
 202-LeuAspIleLeuIleThr-207
 211-ValGlyIleValSerHisAspPheAspArgTyrTrpAla-223
 230-AlaThrArgIleIleArgSerGlyAspIleGlyLysGlyLeuGlnAla-245
 290-AspAspProAlaLysGlyLeuAspArg-298
 307-GlyArgLeuGlnAspAlaLeuLysGlnPro-316
 333-GlyThrAspAlaIleAlaLysLeuValGlnAsp-343
 355-GlnAlaThrAspValAlaAla-361
 443-LysIleAlaGluGlnMetGluArgThrLeu-452
 486-ProGluAlaLysLeuTrpLysArgIleAlaAlaLysIleLeuSerLeuLeuProIleGluGlyLeu-507

Antigenic Index - Jameson-Wolf

1-MetLysThrArgSer-5
 23-ProLeuGluGluArgThrGluSerArgHisPheAsnThrSerLysProValArgLeu-41
 49-HisThrProHisThrAsnGlyLeuSer-57
 77-GluSerAlaGluHisSerLeu-83
 90-TrpArgAsnAspIleSerGlyArgLeu-98
 107-AlaGluArgGlyValArg-112
 115-LeuLeuLeuAspAspAsnAsnThrArgGlyLeuAsp-126
 134-SerHisProAsnIleGluValArgLeu-142
 159-AspPheProArgLeuAsnArgArgMetHisAsnLysSerPheThrAlaAspAsnArgAla-178
 182-GlyGlyArgAsnIleGlyAspGluTyrPheLysValGlyGluAspThrVal-198
 214-ValSerHisAspPheAspArgTyrTrp-222
 225-HisSerAlaHisAsn-229
 232-ArgIleIleArgSerGlyAspIleGlyLysGlyLeu-243
 247-GlyTyrAsnAspGluThrSerArg-254
 259-ArgTyrArgGluThrValGlu-265
 267-SerProLeuTyrGln-271
 282-SerValArgThrArgLeuIleSerAspAspProAlaLysGlyLeuAspArgAspArgArgLysProProIle-
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308-ArgLeuGlnAspAlaLeuLysGlnProGluLysSer-319
 328-ValProThrLysSerGlyThrAspAlaLeu-337
 340-LeuValGlnAspGlyIleAsp-346
 367-ValLysTyrArgLysProLeuLeu-374
 391-AlaThrLysAspLysGlyLeuThrGlySerSer-401
 412-ValAspGlyLysArgIlePhe-418
 422-PheAsnLeuAspProArgSerAlaArgLeuAsnThr-433
 440-GluSerProLysIleAlaGluGlnMetGluArgThrLeuAlaAspThrThrPro-457
 463-ValThrLeuAspArgHisAsnArgLeuGlnTrpHisAspProAlaThrArgLysThrTyrProAsnGluPro
 GluAlaLysLeuTrpLys-492

Hydrophilic Regions - Hopp-Woods

1-MetLysThrArgSer-5
 24-LeuGluGluArgThrGluSerArgHisPheAsnThr-35
 37-LysProValArgLeu-41
 77-GluSerAlaGluHisSerLeu-83
 107-AlaGluArgGlyValArg-112
 115-LeuLeuLeuAspAspAsnAsnThrArgGlyLeuAsp-126
 161-ProArgLeuAsnArgArgMetHisAsn-169
 172-PheThrAlaAspAsnArgAla-178
 189-GluTyrPheLysValGlyGluAspThrVal-198
 214-ValSerHisAspPheAspArg-220
 232-ArgIleIleArgSerGlyAspIleGlyLys-241
 248-TyrAsnAspGluThrSerArg-254
 259-ArgTyrArgGluThrValGlu-265
 282-SerValArgThrArgLeuIleSerAspAspProAlaLysLeuAspArgAspArgArgLysProProle
 -305
 308-ArgLeuGlnAspAlaLeuLysGlnProGluLysSer-319
 331-LysSerGlyThrAspAlaLeu-337
 340-LeuValGlnAspGlyIleAsp-346
 367-ValLysTyrArgLysProLeuLeu-374
 391-AlaThrLysAspLysGlyLeuThr-398
 424-LeuAspProArgSerAlaArgLeuAsnThr-433
 440-GluSerProLysIleAlaGluGlnMetGluArgThrLeuAla-453
 464-ThrLeuAspArgHisAsnArg-470
 476-ProAlaThrArgLysThrTyrProAsnGluProGluAlaLysLeuTrpLys-492
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AMPHI Regions - AMPHI
 45-SerLysIleGluSerLeuAlaArg-52
 125-GlnMetArgGlyIle-129
 154-AspIleValGluArgAlaGlnSerLysVal-163
 221-AlaLysIleIleGluValLeuGlyAspTyrAlaAsp-232
 248-HisGlnPheSerGluAlaCysAlaLysAlaAlaLysLysIle-261
 288-ThrAlaArgAspPheAspAsp-294
 299-GluLysValGlyArgAsnTyr-305
 310-AlaIleAlaAspValSerHisTyrValArgProAspAspValIleAsp-325
 348-AsnLeuSerAsnGly-352
 396-AsnGlnValTrpLysTrpIleSerAspGlyIleAspHisPro-409

411-LysAlaGlnIleAspThrLeuTyrLysLeuPheLysIleLeuGlnLys-426
 494-LeuGlyProThrProGluLysLeuAlaThrLeu-504
 526-TyrAlaAlaLeuValGluGlnPheLys-534
 544-ValMetMetLeuArgSerMetGlnGlnAla-553
 569-AlaTyrAlaHisPheThrSerProIleArgArgTyrProAspLeuThrValHisArgAlaIleLysAlaVal
 Leu-593

-365-

619-AspAspAlaSerArgAspValGluAsnTrpLeuLys-630
 646-IleSerGlyMetThrSerPheGlyIlePheValThrLeu-658
 662-HisIleAspGlyLeuValHisIleSerAspLeuGlyGlu-674

Antigenic Index - Jameson-Wolf

1-MetAsnLysAsnIleLys-6

8-LeuAsnLeuArgGluLysAspProPheLeuSerArgGluLysGlnArgTyrGluHisProLeuProSerArgGl
 uTrpIle-34
 37-LeuLeuGluArgLysGlyValProSerLysIleGluSerLeuAlaArgGluLeuSerIleThrGluAspGluT
 yrValPhePheGluArgArgLeuLysIleMetAlaArgAspGlyGln-76
 79-IleAsnArgArgGlyAlaVal-85

87-AlaAlaAspLysLeuAspLeuValLysCysArgValGluAlaHisLysAspGlyPhe-105
 111-LeuThrProAlaLysAspGlyAsp-118
 124-ArgGlnMetArgGly-128

138-ArgProAlaGlyMetAspArgArgGlyArgArgGluGlyThrVal-152
 155-IleValGluArgAlaGlnSerLysValVal-164
 168-TyrMetAspArgGlyValAla-174

176-LeuGluProGluAspLysArgLeuAsnGln-185

189-LeuGluProAspGlyValAlaArgPheLysProGluSerGlyGln-203
 210-GluValTyrProGluGlnAsnArgProAlaVal-220
 227-LeuGlyAspTyrAlaAspSerGlyMetGluIle-237

239-IleAlaValArgLysHisHisLeu-246
 253-AlaLysAlaLysAlaLysLysIleProValHisValArgLysSerAspLeuLysGlyArgValAspLeu
 ArgAsp-278

283-ThrIleAspGlyGluThrAlaArgAspPheAspAsp-294

299-GluLysValGlyArgAsnTyrArg-306
 316-HisTyrValArgProAspAspValIleAspAlaAspAlaGlnGluArgSerThrSer-334
 337-PheProArgArgVal-341
 345-LeuProGluAsnLeuSerAsnGly-352
 356-LeuAsnProAspValGluArgLeu-363
 374-AlaGlyAsnIleLysGluTyrArgPhe-382
 402-IleSerAspGlyIleAspHisProTyrLysAlaGlnIle-414

424-LeuGlnLysLysArgPheGluArgGlyAlaValGluPheGluSerValGlu-440
 443-MetIlePheAspAspAsnGlyLysIleGluLys-453
 458-ValArgAsnAspAlaHisLysLeuIleGlu-467
 482-LeuLysAsnLysHisThrAla-488
 493-HisLeuGlyProThrProGluLysLeuAlaThrLeuArgGluGlnLeu-508
 516-GlyGlyGlyAspAsnProSerProLysAspTyr-526
 532-GlnPheLysGlyArgProAspAlaGluLeu-541
 556-GluProHisCysAspGlyHis-562
 575-SerProIleArgArgTyrProAspLeuThrVal-585
 597-ThrTyrThrProLysSerTrp-604
 613-PheCysGluArgArgAlaAspAspAlaSerArgAspValGluAsn-627
 633-TyrMetArgAspLysValGlyGluValPheGluGlyLysIleSerGly-648
 670-SerAspLeuGlyGluAspTyrPheAsnPheArgPro-681

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683-IleMetAlaIleGluGlyGluArgSerGlyIleArgPheAsnMetGlyAspArgValAlaValArgValAla
ArgAlaAspLeuAspAspGlyLysIle-715
722-GlyGlySerGlyArgGlyArgLysValLysSerSerAlaSerAlaLysProAlaGlyThrAlaGlyLysGly
LysProLysThrAlaAlaGluLysLysThrAlaArgGlyGlyLysValArgGlyArgGlyAlaSerAlaAlaAlaG
luSerArgLysLysAlaLysLysProValProIleLysValLysLysArgLysGlyLysSer-791

Hydrophilic Regions - Hopp-Woods

1-MetAsnLysAsnIleLys-6

8-LeuAsnLeuArgGluLysAspProPheLeuSerArgGluLysGlnArgTyrGluHis-26
37-LeuLeuGluArgGlyValProSerLysIleGluSerLeuAlaArgGluLeuSerIleThrGluAspGluT
yrValPhePheGluArgLeuLysAlaMetAlaArgAspGlyGln-76

79-IleAsnArgArgGlyAla-84

87-AlaAlaAspLysLeuAspLeuValLysCysArgValGluAlaHisLysAspGlyPhe-105

113-ProAlaLysAspGlyAsp-118

140-AlaGlyMetAspArgArgGlyArgArgGluGlyThrVal-152

155-IleValGluArgAlaGlnSerLysValVal-164

176-LeuGluProGluAspLysArgLeuAsn-184

189-LeuGluProAspGlyValAlaArgPheLysProGluSerGly-202

210-GluValTyrProGluGlnAsnArgProAlaVal-220

230-TyrAlaAspSerGlyMetGluIle-237

239-IleAlaValArgLysHisHis-245

253-AlaCysAlaLysAlaAlaLysLysIleProValHisValArgLysSerAspLeuLysGlyArgValAspLeu
ArgAsp-278

284-IleAspGlyGluThrAlaArgAspPheAspAsp-294

299-GluLysValGlyArgAsnTyr-305

318-ValArgProAspAspValIleAspAlaAspAlaGlnGluArgSerThr-333

358-ProAspValGluArg-362

376-AsnIleLysGluTyrArg-381

405-GlyIleAspHisProTyr-410

424-LeuGlnLysLysArgPheGluArgGlyAlaValGluPheGluSerValGlu-440

443-MetIlePheAspAspAsnGlyLysIleGluLys-453

458-ValArgAsnAspAlaHisLysLeuIleGlu-467

496-ProThrProGluLysLeuAlaThrLeuArgGluGlnLeu-508

517-GlyGlyAspAsnProSerProLysAspTyr-526

532-GlnPheLysGlyArgProAspAlaGluLeu-541

576-ProIleArgArgTyrProAsp-582

598-TyrThrProLysSerTrp-604

613-PheCysGluArgArgAlaAspAspAlaSerArgAspValGluAsn-627

633-TyrMetArgAspLysValGlyGluValPheGluGlyLysIle-646

683-IleMetAlaIleGluGlyGluArgSerGlyIle-693

696-AsnMetGlyAspArgValAlaValArgValAlaArgAlaAspLeuAspAspGlyLysIle-715

723-GlySerGlyArgGlyArgLysValLysSerSerAlaSerAlaLysProAlaGlyThrAlaGlyLysGlyLys
ProLysThrAlaAlaGluLysLysThrAlaArgGlyGlyLysValArgGlyArgGlyAlaSerAlaAlaAlaGluS
erArgLysLysAlaLysLysProValProIleLysValLysLysArgLysGlyLysSer-791

989

AMPHI Regions - AMPHI

58-AlaGlyLeuThrLysLeu-63

85-SerAlaThrAspPhe-89

98-LysSerGlyLysIleThr-103
 109-ProHisIleTyrGlyAla-114
 183-GluLeuArgLysTyrAlaAsp-189
 205-LysProAsnGlyValAlaGluAla-212
 273-AlaMetTrpSerThr-277
 301-SerValHisGlyMetTyrLysValSer-309
 320-TrpThrArgHisSerArg-325
 364-SerTyrGlnIleSerGluProLeu-371
 450-PheLysAsnHisAlaAsp-455

Antigenic Index - Jameson-Wolf

46-GluAlaAlaAspAlaSer-51
 57-ProAlaGlyLeuThrLysLeuAspSerSerGlnIle-68
 81-TyrGluAlaAspSerAlaThrAspPheThr-90
 95-GlnGlySerLysSerGlyLysIleThrLysThrThr-106
 116-LysValAsnAspAsnLeuThr-122
 132-GlySerAlaThrGluTyrGluLysAspSerValLeu-143
 146-AsnIleAsnLysLeuGly-151
 164-LysLeuAsnAspArgHisSerPheGly-172
 180-ThrSerAlaGluLeuArgLysTyrAla-188
 191-GlyIleLysSerLysAlaGluIleLeuThrAlaLysProProLysProAsnGlyValAlaGluAlaAlaLys
 IleGlnAlaAspGlyHisAlaAspValLysGlySerAspTrpGly-229
 239-AspIleAsnAspArgAlaArgValGlyValAsnTyrArgSerLysValSerHisThrLeuLysGlyAspAla
 GluIleAlaAla-266
 285-ThrAlaAsnGluLysAlaArgValLysIleValThrProGluSer-299
 306-TyrLysValSerAspLysAlaAspLeu-314
 319-ThrTrpThrArgHisPheAspLysAlaGluLeuValPheGluLysThrValValLysGly
 LysSerAspArgThrThrIle-349
 351-ProAsnIlePheAspLysSerProValArgAsnAlaAspTyrArgMetAsnSerLeuProAspGlyAsn-398
 409-HisIleGlyLysAsnHisVal-415
 426-AsnAspThrSerTyrArgThrAlaLysAlaSerGlyAsnAspValAspSerLysGlyAlaSerSerAlaArg
 PheLysAsnHisAla-454

Hydrophilic Regions - Hopp-Woods

61-ThrLysLeuAspSerGln-67
 81-TyrGluAlaAspSerAlaThr-87
 95-GlnGlySerLysSerGlyLysIleThrLys-104
 135-ThrGluIleGluLysAspSerValLeu-143
 164-LysLeuAsnAspArgHisSer-170
 180-ThrSerAlaGluLeuArgLysTyrAla-188
 191-GlyIleLysSerLysAlaGluIleLeuThr-200
 202-LysProProLysProAsnGlyValAlaGluAlaAlaLysIleGlnAla-217
 219-GlyHisAlaAspValLysGlySerAsp-227
 240-IleAsnAspArgAlaArgVal-246
 250-TyrArgSerLysVal-254
 258-LeuLysGlyAspAlaGluTrpAlaAla-266
 285-ThrAlaAsnGluLysAlaArgValLysIleValThr-296
 307-LysValSerAspLysAlaAspLeu-314
 324-SerArgPheAspLysAlaGluLeuValPheGluLysGluLysThrValValLysGlyLysSerAspArgThr
 ThrIle-349
 377-IleAlaPheAspLysSerProValArgAsnAlaAspTyrArgMet-391
 393-SerLeuProAspGlyAsn-398

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428-ThrSerTyrArgThrAlaLysAlaSerGlyAsnAspValAspSerLysGlyAlaSerSerAlaArgPheLys
AsnHisAla-454

990

AMPHI Regions - AMPHI

89-LysSerGlnLeuGlnAspLeuTyrLys-97

128-ThrMetProAspLeuIleAsnLysLeuVal-137

151-ThrSerLeuAsnAsnIlePhe-157

191-ArgArgHisSerAspIleHisThrLeuGluThrSerAsp-203

260-ProGluAsnLeuLysThrLeuAspGly-268

293-TyrGluLeuLeuLysGlnCys-300

372-AlaAspGlyTrpArgLysGlyVal-379

423-GlyTyrGlyGlyValTyrAlaAlaTrp-432

442-AlaTyrLeuAspGlyTrpLeuGlnTyr-450

472-ThrAlaSerValGluGlyGlyTyrAsnAlaLeu-482

550-GlnProPheAlaAlaPheAsnValLeuHisArg-560

Antigenic Index - Jameson-Wolf

6-LeuGlySerAsnThrArgSerThrLysIleGlyAspAspAlaAspPheSerAspLysProLysProGlyThr-31

35-PheSerSerGlyLysThrAspGlnAsnSerSerGluTyrGlyTyrAspGluIleAsnIleGlnGlyLysAsnTyroAsnSerGlyIle-63

75-TyrIleThrGluLysTyrGlyAlaAspLeuLysGlnAlaVal-88

90-SerGlnLeuGlnAspLeuTyrLysThrArgProGluAlaTrpAlaGluAsnLysLysArgThrGluGluAlaTyro-114

120-ThrLysPheSerThrLeuLysGlnThrMetPro-130

145-HisSerAsnThrSerGlnThrSer-152

157-PheAsnLysLysLeuHisVallysIleGluAsnLysSerHisVal-171

179-ThrLysMetThrLeuLysAspValLeuTrpGluProArgArgHisSerAspIleHisThrLeuGluThrSerAspAsnAlaArgIleArgLeuAsnThrLysAspGluLysLeuThrValHisLysAspTyrAlaGlyGlyAlaAsp-227

232-TyrAspValArgGluSerAspGluProAlaLeuThrPheGluAspLysValSerGlyGlnSerGlyValValLeuGluArgArgProGluAsnLeuLysThrLeuAspGlyArgLysLeuIleAla-273

275-LysThrAlaAspSerGlySerPheAlaPheLysGlnAsnTyrArgGlnGlyLeu-292

298-LysGlnCysGluGlyGlyPhe-304

312-AlaIleProGluAlaGlu-317

335-ArgAlaAlaAspArgGlyAspAspValTyrAlaAlaAspProSerArgGlnLysLeu-353

358-IleGlyArgSerHisGlnAsnIleArgGlyGlyAlaAlaAlaAspGlyTrpArgLysGlyVal-379

385-ValPheValArgGlnAsnGluGlySerArgLeuAla-396

400-MetGlyGlyArgAlaGlyGln-406

408-AlaSerValAsnGlyLysGlyGlyAlaAlaGlySerAspLeu-421

435-LeuArgAspLysGlnThrGlyAlaTyr-443

452-ArgPheLysHisArgIleAsnAspGluAsnArgAlaGluArgTyrLysThrLysGlyTrpThr-472

475-ValGluGlyGlyTyr-479

487-IleValGlyLysGlyAsnAsnValArg-495

510-AsnGlyGlyPheThrAspSerGluGlyThrAla-520

525-GlySerGlyGlnTrpGlnSerArgAlaGlyIleArgAlaLysThrArgPheAlaLeuArgAsnGlyValAsn-548

559-HisArgSerLysSerPheGlyValGluMetAspGlyGluLysGlnThrLeuAla-576

579-ThrAlaLeuGluGlyArgPheGlyIle-587

589-AlaGlyTrpLysGlyHisMet-595

600-GlyTyrGlyLysArgThrAspGlyAspLysGluAlaAlaLeu-613

Hydrophilic Regions - Hopp-Woods

8-SerAsnThrArgSerThrLysIleGlyAspAspAlaAspPheSerAspLysProLysProGlyThr-3

1

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38-GlyLysThrAspGlnAsnSerSer-45
 79-LysTyrGlyAlaAspLeuLysGlnAlaVal-88
 96-TyrLysThrArgProGluAlaTrpAlaGluAsnLysLysArgThrGluGluAlaTyr-114
 161-LeuHisValLysIleGluAsnLysSerHisVal-171
 179-ThrLysNetThrLeuLys-184
 186-SerLeuTrpGluProArgArgHisSerAsp-195
 200-GluThrSerAspAsnAlaArgIleArgLeuAsnThrLysAspGluLysLeuThrVal-218
 220-LysAspTyrAlaGly-224
 233-AspValArgGluSerAspGluProAlaLeuThrPheGluAspLysValSerGly-250
 255-ValLeuGluArgArgProGluAsnLeuLysThrLeuAspGlyArgLysLeuIleAla-273
 275-LysThrAlaAspSerGly-280
 312-AlaIleProGluIleGlu-317
 335-ArgAlaAlaAspArgGlyAspAspValTyrAla-345
 347-AspProSerArgGln-351
 361-ArgSerHisGlnAsnIleArgGly-368
 373-AspGlyTrpArgLys-377
 385-ValPheValArgGlnAsnGluGlySerArg-394
 410-ValAsnGlyLysGlyGlyAlaAlaGly-418
 435-LeuArgAspLysIleThr-440
 452-ArgPheLysHisArgIleAsnAspGluAsnArgAlaGluArgTyrLysThr-468
 513-PheThrAspSerGluGlyThr-519
 533-AlaGlyIleArgAlaLysThrArgPheAlaLeu-543
 559-HisArgSerLysSerPheGlyValGluMetAspGlyGluLysGlnThrLeuAla-576
 579-ThrAlaLeuGluGly-583
 600-GlyTyrGlyLysArgThrAspGlyAspLysGluAlaAlaLeu-613

992

AMPHI Regions - AMPHI

6-ArgHisLeuLysAsnMetGlnIleLysIleMetLysTrp-19
 24-LeuSerLeuLeuGlyAlaLeuGlyTyr-32
 45-AlaValLeuAspValLeuGlyAlaAla-53
 72-HisArgTyrThrGlyThrValSerLysValTyr-82
 158-GlnValGlnAspGly-162
 179-AspPheAlaAspTyr-183

Antigenic Index - Jameson-Wolf

1-MetPheArgArgHisArgHisLeuLys-9
 34-GlyTyrGlySerGluAlaValArg-41
 52-AlaAlaGlyAspAlaGlySerAspAlaProAlaArgArgAlaSerAlaLysSerGlyHisArgTyrThr-75
 79-SerLysValTyrAspGlyAspThr-86
 90-IleAspGlyAspGlyAlaLysHisLysIle-99
 105-AspAlaProGluMetLysGlnAlaTyrGlyThrArgSerArgAspAsnLeuArgAlaAlaGluGlyArgLysValSer-131
 134-ValPheAspThrArgTyrGlnArgGluValAla-145
 148-SerValGlyLysThrAspLeuAsn-155
 168-LysSerTyrAlaLysGluGlnGlnAspLysAlaAspPhe-180
 187-GlnIleGlnAlaGluArgGluArgLysGlyLeuTrpLysAlaLysAsnProGlnAlaPro-206
 208-AlaTyrArgArgAlaGlyArgSerGlyGlyAsnLysAspTrpMetAsp-224

Hydrophilic Regions - Hopp-Woods

1-MetPheArgArgHisArgHisLeuLys-9
 54-GlyAspAlaGlySerAspAlaProAlaArgArgAlaSerAlaLysSerGlyHisArg-73
 90-IleAspGlyAspGlyAlaLysHisLysIle-99
 105-AspAlaProGluMetLysGln-111
 113-TyrGlyThrArgSerArgAspAsnLeuArgAlaAlaGluGlyArgLysValSer-131

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134-ValPheAspThrAspArgTyrGlnArgGluValAla-145
 148-SerValGlyLysThrAspLeu-154
 169-SerTyrAlaLysGluGlnGinAspLysAlaAspPhe-180
 187-GlnIleGlnAlaGluArgGluArgLysGlyLeuTrpLysAlaLysAsnPro-203
 211-ArgAlaGlyArgSerGlyGlyGlyAsnLysAspTrpMet-223
 993

AMPHI Regions - AMPHI
 6-GlySerPheGlnGlyProLeuAspLeuLeuLeu-16
 35-ThrGluGlnTyrLeuHisTyrIleAlaGlnIle-45
 105-GlyLeuAspAlaLeuProArgAla-112
 136-IleThrAspLeuThrGlnAlaTrpLeuGly-145
 152-HisThrArgSerHisGluValIle-159
 169-MetThrAlaIleLeuArgArgLeuAsnGlyHisGlyIleCysArgPheHisAspLeuPheAsn-189
 199-ValAsnPheIleAlaLeuLeu-205
 211-GlyLeuValArgIleValGln-217

Antigenic Index - Jameson-Wolf

20-ArgLysGlnAsnIleAsp-25
 70-LeuLeuLeuProArgThrGluThrValGluAspGluGluAlaAspProArgAlaGluLeuValArg-91
 108-AlaLeuProArgAlaGlyArgAspPhe-116
 148-SerArgAlaLysHisThrArgSerHisGluValIleLysGluThrIleSer-164
 172-IleLeuArgLeuAsnGlyHisGlyIle-181
 186-AspLeuPheAsnProLysGlnGlyAla-194
 207-LeuAlaLysGluGlyLeu-212
 216-ValGlnGluAspGlyPheGlyGluIleArgIle-226
 228-LeuAsnHisGluGlyAlaHisSerAspGlyIleSerGlyThrArgGlyGlyArgAspValPhe-248

Hydrophilic Regions - Hopp-Woods

20-ArgLysGlnAsnIleAsp-25
 70-LeuLeuLeuProArgThrGluThrValGluAspGluGluAlaAspProArgAlaGluLeuValArg-91
 108-AlaLeuProArgAlaGlyArg-114
 148-SerArgAlaLysHisThrArgSerHisGluValIleLysGluThrIleSer-164
 207-LeuAlaLysGluGlyLeu-212
 216-ValGlnGluAspGlyPheGly-222
 232-GlyAlaHisSerAspGlyIleSerGlyThrArgGlyGlyArgAspValPhe-248
 996

AMPHI Regions - AMPHI
 21-LysSerAlaArgThrHisAlaLysIlePro-30
 50-ProGlyGluSerTyrProAlaGlnLeuGlnLysLeuThrGlyTrpAsn-65
 75-ThrSerAlaGlnAlaLeuSerArgLeuProAla-85
 104-LeuArgLysValProLysGlu-110
 115-AsnIleAlaLysIleIleGluThrValGlnLys-125
 140-LeuGlyAlaLeuPheGlyHisLeuSerAsp-149
 167-GlyAlaTrpAlaGlu-171
 186-AsnGlyLysGlyTyrArgLysPheAlaGluAspLeuAsnGlnPheLeuArgLysGlnGlyPhe-206

Antigenic Index - Jameson-Wolf

1-MetAsnArgArgThrPhe-6
 18-CysGlyArgLysSerAlaArgThrHisAlaLysIleProGluGlySerThr-34
 46-TyrGlyAlaAsnProGlyGluSerTyrPro-55
 69-GlyGlyValSerGlyAspThrSerAla-77
 87-LeuAlaArgLysProLys-92
 99-GlyGlyAsnAspPheLeuArgLysValProLysGluGlnThrArgAlaAsnIle-116
 121-GluThrValGlnLysGluAsnIlePro-129
 148-SerAspHisProLeuTyrGluAspLeuSerGluGluTyrGly-161

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173-LeuGlyAspAsnAsnLeuLysSerAspGlnIleHisAlaAsnGlyLysGlyTyrArgLysPheAlaGluAsp
LeuAsnGlnPheLeuArgLysGlnGlyPheArg-207

Hydrophilic Regions - Hopp-Woods

18-CysGlyArgLysSerAlaArgThrHisAlaLysIleProGlu-31
49-AsnProGlyGluSerTyr-54
71-ValSerGlyAspThrSerAla-77
87-LeuAlaArgLysProLys-92
102-AspPheLeuArgLysValProLysGluGlnThrArgAlaAsnIle-116
121-GluThrValGlnLysGluAsnIle-128
154-GluAspLeuSerGluGluTyrGly-161
176-AsnAsnLeuLysSerAspGlnIleHisAlaAsn-186
188-LysGlyTyrArgLysPheAlaGluAspLeuAsnGlnPheLeuArg-202
997

AMPHI Regions - AMPHI

18-TrpAlaGlyLeuSerAlaAlaVal-25
70-TyrArgGlyValLeuArgLeuMetLysThrIleGly-81
107-ProLeuAlaProLeuHisIle-114
132-LeuLeuAlaAspMetSerAspLeuGlnLysSerAlaArgLeuGly-146
164-AlaAlaValMetGlnPheTrpGlnProLeuValTrpGly-176
189-ValLeuCysAsnValLeuSerAsp-196
222-AlaLeuAlaAspLeuGlnArg-228
241-ArgLeuAsnThrLeuPro-246
275-GluGlyThrProGluHisValGlnThrAla-284
300-TyrAlaGluProValArgLeuProAlaProLeuThrGlyLeuAlaAspGly-316
355-LysAlaHisAlaAspLeuLysArgIleLeuProHisLeu-367
369-GluProGluAlaVal-373

Antigenic Index - Jameson-Wolf

3-AsnThrProHisProArgProLysIle-11
37-GluAlaGlyArgGlnAlaGlyGlyArgAlaArgThrLeuAlaGlyAsnThrAspGlyPheGly-57
78-LysThrIleGlySerAspProArgAla-87
122-ArgArgAlaProThr-126
132-LeuLeuAlaAspMetSerAspLeuGlnLysSerAlaArgLeuGlyGlnProAspThrThr-151
156-LeuLysGlnArgAsnValProArg-163
180-ThrProLeuGluThrAlaSer-186
197-GlyValLeuThrLysSerGlySerAspTyrLeuLeuProLysGlnAspLeu-214
225-AspLeuGlnArgLeuGlyAlaAspIleArgLeuGluThrArgValCysArg-241
243-AsnThrLeuProAspGlyLysVal-250
273-LeuProGluGlyThrProGluHisVal-281
312-GlyLeuAlaAspGlyThr-317
323-CysArgGlyArgLeuGlyLeuProGluAsnGluVal-334
340-ValSerAspArgValGlyAla-346
351-AlaTrpAlaAspLysAlaHisAlaAspLeuLysArgIleLeu-364
367-LeuGlyGluProGluAlaValArgValIleThrGluLysArgAlaThrThrAlaAlaAspAlaProProPro
AspLeu-392
402-ProAlaGlyAspTyrLeuHisProAspTyrProAla-413

Hydrophilic Regions - Hopp-Woods

5-ProHisProArgProLysIle-11
37-GluAlaGlyArgGlnAlaGlyGlyArgAlaArgThrLeuAlaGlyAsn-52
80-IleGlySerAspProArgAlaAla-87
122-ArgArgAlaProThr-126
132-LeuLeuAlaAspMetSerAspLeuGlnLysSerAlaArgLeuGlyGlnProAspThrThr-151
198-ValLeuThrLysSerGlySer-205

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208-LeuLeuProLysGlnAspLeu-214
 225-AspLeuGlnArgLeuGlyAlaAspIleArgLeuGluThrArgValCysArg-241
 246-ProAspGlyLysVal-250
 276-GlyThrProGluHisVal-281
 325-GlyArgLeuGlyLeuProGluAsnGluVal-334
 340-ValSerAspArgValGly-345
 351-AlaTrpAlaAspLysAlaHisAlaAspLeuLysArgIleLeu-364
 368-GlyGluProGluAlaValArgValIleThrGluLysArgAlaThrThrAlaAlaAspAlaProProPro-390
 0
 999

AMPHI Regions - AMPHI

6-LeuIleSerAlaIleCysValSerIle-14
 30-GluProValGlnSerIleGlnAlaAla-38
 117-GlyGlnAsnLeuValAsnAsnAlaIleAsnGlyLeuHisSerIleGlnAlaValLeuSer-136
 138-ThrThrThrAspLys-142
 151-GlnIleuPheThrAlaLeuThrGluValValLysGluSer-163

Antigenic Index - Jameson-Wolf

1-MetAsnMetLysLysLeuIle-7
 18-AlaCysAsnGlnGlnSerLysThrAlaGlnAlaGluGluProValGln-33
 42-AlaProMetAspIleThrVal-48
 57-GlnAlaPheLysThrGlnAsnValSer-65
 67-LysIleHisAsnLysAsnIleValLysThrAspCysGlyTyr-80
 94-LysLeuAspGluGlnGlnLysIleArgAla-103
 111-LysThrAspGlyGluLysGlyGlnAsnLeu-120
 138-ThrThrThrAspLysLeuGlyGluSerGluAlaGlyLys-150
 158-GluValValLysGluSerAsnGlnThrGly-167
 169-ThrAlaGlnLysAspValProAlaAspGly-178
 185-PheGluLysGluThrAsnThr-191
 195-IleGlyArgLysGlnPro-200

Hydrophilic Regions - Hopp-Woods

1-MetAsnMetLysLysLeuIle-7
 21-GlnGlnSerLysThrAlaGlnAlaGluGluProValGln-33
 72-AsnIleValLysThrAspCysGlyTyr-80
 94-LysLeuAspGluGlnGlnLysIleArgAla-103
 112-ThrAspGlyGluLysGlyGlnAsn-119
 139-ThrThrAspLysLeuGlyGluSerGluAlaGlyLys-150
 158-GluValValLysGluSerAsnGln-165
 169-ThrAlaGlnLysAspValProAla-176
 185-PheGluLysGluThrAsn-190
 195-IleGlyArgLysGlnPro-200

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AMPHI Regions - AMPHI

7-AlaAlaArgArgMet-11
 69-PhePheGlySerAlaCysAsnSerAlaAla-78

Antigenic Index - Jameson-Wolf

3-ProGlnGlyLysAlaAlaArgArgMetSerAlaAsnGluValCys-17
 31-ThrLeuProLysArgAspThrLeuAsnGlySerGlyThr-43
 53-ProArgSerLeuArgSerLysSerThr-61
 68-ArgPhePheGlySerAlaCysAsnSerAlaAlaArgArgSerSerCysProSerProLysIleGly-89
 100-ValProSerGluProIleLeuArgLysSerSerGlyGluLysHisSerVal-116
 118-AlaAspCysProCysAlaSerGlyArgTrpAspLysThrAla-131

Hydrophilic Regions - Hopp-Woods

5-GlyLysAlaAlaArgArgMetSerAla-13
 32-LeuProLysArgAspThrLeuAsn-39
 54-ArgSerLeuArgSerLysSer-60
 76-SerAlaAlaArgArgSerSerCysProSerProLys-87
 104-ProIleLeuArgLysSerSerGlyGluLysHisSerVal-116
 125-GlyArgTrpAspLysThrAla-131

a003

AMPHI Regions - AMPHI

72-AsnGlnValValLeu-76
 82-IleValGluValPheGlnArg-88
 138-ArgIleAsnAspAlaGluGluIleLeuGlnAspValValAlaGluPheValGlyIleValGlyHisPheAsp
 GlyPheGlyVal-165
 174-PheIleAlaArgIlePheArgVal-181

Antigenic Index - Jameson-Wolf

91-PheAsnAsnGluGlyGln-96
 104-PheGluGlyGlyCysAspAspGlyPhe-112
 137-GlyArgIleAsnAspAlaGluGluIleLeu-146
 204-ProGluAlaAlaAlaGlyGluValAspGlyAlaArgValHisAsp-218

Hydrophilic Regions - Hopp-Woods

106-GlyGlyGlyAspAspGlyPhe-112
 137-GlyArgIleAsnAspAlaGluGluIleLeu-146
 205-GluAlaAlaAlaGlyGluValAspGlyAlaArgValHisAsp-218

a005

AMPHI Regions - AMPHI

14-IleGlnSerMetTrpLysGlu-20
 30-LeuGluLeuLeuThrValPheGlyAlaIleAla-40
 60-LeuThrAspPheSerGluAsnTyr-67
 105-ArgLeuLysGluGlyGlyGluLysSerSerGlu-115
 175-GlnLeuArgArgLeuArg-180
 214-AlaIleValGlySerValGlyValValAlaGluValProAsnIleHisArgLeuLeuLysIlys-234
 247-PheLysArgThrVal-251
 272-ThrHisGlnLeuPheLysGln-278
 306-LeuAsnIleLeuAspGluIleSerThr-314
 318-LeuLeuLeuLysAlaPhe-323

Antigenic Index - Jameson-Wolf

8-MetProGluGlnGluGluIleGlnSerMetTrp-18
 48-GlnSerLysLysGlnSerGluSerGlySer-57
 62-AspPheSerGluAsnTyrLysLysGlnArgGlnSerPhe-74
 80-SerGlyGluGluAlaLysHisGlnGluLysGluGluLysLysGluLysAlaGluAlaLysAlaGluLysLysArgLeuLysGluGlyGlyGluLysSerSerGluThrGlnLysSerArg-120
 136-GluSerLeuArgHisGluIle-142
 149-AlaLysProGluAspGluValLeuLeu-157
 159-LeuGluSerProGlyGlyVal-165
 175-GlnLeuArgArgLeuArgGluArgAsnIle-184
 189-AlaValAspLysValAlaAla-195
 230-AргLeuLeuLysLysHisAspIleAspVal-239
 245-GlyGluPheLysArgThr-250
 256-GluAsnThrGluLysGlyLysGlnLysPheArgGlnGluLeuGluGluThrHisGln-274
 279-PheValSerGluAsnArgProGlnLeuAspIleGluGluValAlaThr-294
 310-AspGluIleSerThrSerAspAspLeuLeu-319

323-PheGluAsnLysGlnValIle-329
 332-LysTyrGlnGluLysGlnSerLeu-339
 349-AlaSerValGluLysLeuPhe-355
 359-ValAsnArgArgAlaAspVal-365

Hydrophilic Regions - Hopp-Woods
 8-MetProGluGlnGluGluIleGlnSerMetTrp-18
 48-GlnSerLysLysGlnSerGluSerGly-56
 62-AspPheSerGluAsnTyrLysLysGlnArgGlnSerPhe-74
 81-GlyGluGluAlaLysHisGlnGluLysGluGluLysLysGluLysAlaGluAlaLysAlaGluLysLysA
 rgLeuLysGluGlyGlyGluLysSerGluThrGlnLysSerArg-120
 136-GluSerLeuArgHisGluIle-142
 149-AlaLysProGluAspGluValLeuLeu-157
 159-LeuGluSerProGly-163
 175-GlnLeuArgArgLeuArgGluArgAsnIle-184
 189-AlaValAspLysValAlaAla-195
 230-ArgLeuLeuLysLysHisAspIleAspVal-239
 245-GlyArgPheLysArg-249
 256-GluAsnThrGluLysGlyLysGlnLysPheArgGlnGluLeuGluGluThrHisGln-274
 279-PheValSerGluAsnArgProGlnLeuAspIleGluGluValAlaThr-294
 310-AspGluIleSerThrSerAspAspLeuLeu-319
 323-PheGluAsnLysGlnValIle-329
 332-LysTyrGlnGluLysGlnSerLeu-339
 349-AlaSerValGluLysLeuPhe-355
 359-ValAsnArgArgAlaAspVal-365

a006-1

AMPHI Regions - AMPHI

40-GlnAlaTrpGlnAlaLeuTyrAlaLeuValValLeu-52
 61-ArgArgIleAlaAspThrArgThrPheThrArgIleTyrThrGlu-75
 103-GluPheValSerPhePheGlu-109
 117-ThrSerValValSerGlyAlaCysIleMetLeuLeu-130
 179-GlyAspGluArgGlnLeu-184
 186-ArgHistyrGlyLeuLeuAlaArgLeu-194
 228-GlyTyrSerSerAlaGlyHisValTyrSer-237
 249-LeuAspAspValProArgLeuValGluGlnTyrSerAsnLeuLysAspIle-265

Antigenic Index - Jameson-Wolf

1-SerGlnAsnHisArgLysArgLeu-8
 59-AlaAlaArgArgIleAlaAspThrArgThrPheThr-70
 82-LeuGluGlnArgGlnArgGlnValProHisSer-92
 163-PheArgLeuLysAsnSerLeuGluArgAspAsnHisPheIleArgLysGlyAspGluArgGlnLeuAspArg
 HisTyr-188
 198-IleSerAsnArgGluAlaPhe-204
 227-LysGlyTyrSerSer-231
 249-LeuAspAspValProArgLeuValGluGlnTyrSerAsnLeuLysAspIleGlyGln-267
 269-IleGluTrpSerLysArgAsnIleLysAlaGlyThr-280

Hydrophilic Regions - Hopp-Woods

1-SerGlnAsnHisArgLysArgLeu-8
 59-AlaAlaArgArgIleAlaAspThrArgThrPhe-69
 82-LeuGluGlnArgGlnArgGlnValPro-90
 166-LysAsnSerLeuGluArgAspAsnHisPheIleArgLysGlyAspGluArgGlnLeuAspArg-186
 198-IleSerAsnArgGluAla-203
 249-LeuAspAspValProArgLeuValGlu-257
 260-SerAsnLeuLysAspIleGlyGln-267

-375-

269-IleGluTrpSerLysArgAsnIleLysAlaGlyThr-280

a007-1**AMPHI Regions - AMPHI**

71-HisSerMetValLysGlyIleAsn-78

105-ValAlaThrTyrIleMetAsnAlaPheAspAsnGlyGlyGly-118

Antigenic Index - Jameson-Wolf

1-MetAsnThrThrArgLeu-6

20-SerAlaAlaAspAsnSerIleMetThrLysGlyGlnLysValTyrGluSerAsnCys-38

41-CysHisGlyLysLysGlyGluGlyArgGlyThr-51

55-ProLeuTyrArgSerAspPheIleMetLysLysProGln-67

83-ValAsnGlyLysThrTyrAsnGly-90

98-SerAspAlaAspIle-102

112-AlaPheAspAsnGlyGlySerValThrGluLysAspValLysGlnAlaLysAsnLysLys-132

Hydrophilic Regions - Hopp-Woods

26-IleMetThrLysGlyGlnLysValTyrGlu-35

42-HisGlyLysGlyGluGlyArgGly-50

61-PheIleMetLysLysProGln-67

98-SerAspAlaAspIle-102

119-SerValThrGluLysAspValLysGlnAlaLysAsnLysLys-132

a008**AMPHI Regions - AMPHI**

15-LeuGluAsnProAlaGlnGlnValArgAlaAlaLeuAspThrLeuSer-30

54-GlnProAspPheValAsnAlaVal-61

69-AspGlyIleAlaLeuLeuAlaGluLeuAsnArg-79

90-PheArgAsnAlaPro-94

129-ArgProLeuAlaGluIleLeuProAsp-137

144-GlyLysValAlaGluLeuSerLysArgLeuGly-154

Antigenic Index - Jameson-Wolf

1-MetAsnAsnArgHis-5

12-GlySerAsnLeuGluAsnProAlaGlnGlnVal-22

29-LeuSerSerHisProAspIleArgLeuLysGlnAlaSerSer-42

49-ValGlyTyrAspAsnGlnProAspPhe-57

76-GluLeuAsnArgIleGluAlaAspPheGlyArgGluArgSerPheArgAsnAlaProArgThrLeuAspLeuA
spIleIleAspPheAspGlyIleSerSerAspAspProArgLeuThrLeuProHisProArgAlaHisGluArgSe
rPheVal-127

140-LeuGlyLysHisGlyLysValAlaGluLeuSerLysArgLeuGlyAsnGlnGlyIle-158

160-LeuLeuProAspLys-164

Hydrophilic Regions - Hopp-Woods

14-AsnLeuGluAsnProAlaGlnGlnVal-22

33-ProAspIleArgLeuLysGln-39

76-GluLeuAsnArgIleGluAlaAspPheGlyArgGluArgSerPheArgAsnAlaProArgThrLeuAsp-98

105-AspGlyIleSerSerAspAspProArgLeu-114

120-ArgAlaHisGluArgSerPheVal-127

142-LysHisGlyLysValAlaGluLeuSerLysArgLeuGly-154

160-LeuLeuProAspLys-164

a009**Antigenic Index - Jameson-Wolf**6-ValAlaPheGluArgHisHisLysSerLysAlaGluGlnAsnThrHisArgArgAlaAspAlaGluIleAl
aGlu-31

37-AsnGlnHisThrGlnAlaArgLysGlnSer-46

57-PheSerAspLysVal-61

77-AlaAspGlyGlyLysThrTrpGlnLysPro-86

Hydrophilic Regions - Hopp-Woods

6-ValAlaPheGluArgHisHisLysSerLysAlaGluGlnAsnThrHisArgArgAlaAspAlaGluIleAlaGlu-31

40-ThrGlnAlaArgLysGlnSer-45

78-AspGlyGlyLysThrTrpGln-84

a010-1

AMPHI Regions - AMPHI

54-SerAlaSerLeuGly-58

70-TyrAspThrValLysGly-75

115-TyrGlnArgProPheGlyGlyHis-122

125-GluHisGlyLysLysArgAlaVal-131

146-LeuHisThrLeuTyrGln-151

210-AlaSerSerThrAsn-214

216-TyrMetAsnThrGlyAspGly-222

275-ArgTyrAlaProThrValLys-281

322-IleMetGluLysLeuProGlyIleArg-330

338-GlyIleAspProIleLysAspProIlePro-347

357-GlyGlyIleProThrAsnTyrHis-364

413-AlaAlaGlyAspSerMetIleLysPhenylElysGluGlnSerAspTrp-428

446-LeuAspAsnGlnThrAsp-451

453-GluAsnValAspAlaLeuArgArgGluLeu-462

479-LeuSerLysGlyValArgGluValMetAlaIleAlaGlu-491

505-TrpAsnThrAlaArg-509

514-GluLeuAspAsnLeuIleGluValAlaLys-523

Antigenic Index - Jameson-Wolf

14-GlyGlyGlyGlyAlaGlyLeu-20

26-LeuSerLysSerGlyLeu-31

40-PheProThrArgSerHisThr-46

59-AsnValGlnGluAspArgTrpAsp-66

71-AspThrValLysGlySerAspTrpLeuGlyAspGlnAspAlaIle-85

104-MetProPheAspArgValGluSerGlyLysIleTyrGlnArgProPheGly-120

123-ThrAlaGluHisGlyLysArgAlaValGluArgAlaCysAlaValAlaAspArgThrGly-142

152-GlnAsnValArgAlaAsnThrGln-159

168-AspLeuIleArgAspGluAsnGlyAspVal-177

183-MetGluMetGluThrGlyGlu-189

202-ThrGlyGlyGlyGlyArgIle-208

211-SerSerThrAsnAla-215

218-AsnThrGlyAspGlyLeu-223

231-IleProLeuGluAspMetGlu-237

255-GluGlyValArgGlyGluGlyGlyIle-263

266-AsnAlaAspGlyGluArgPheMetGlu-274

276-TyrAlaProThrValLysAspLeuAlaSerArgAspValValSer-290

297-IleTyrGluGlyArgGlyCysGlyLysAsnLysAspHisVal-310

315-AspHisIleGlyAlaGluLysIleMetGluLysLeuProGlyIleArgGluIleSer-333

338-GlyIleAspProIleLysAspProIle-346

368-ValValProGlnGlyAspGluTyrGluValProVal-379

395-GlyAlaAsnArgLeuGlyThrAsnSerLeu-404

413-AlaAlaGlyAspSerMet-418

421-PheIleLysGluGlnSerAspTrpLysProLeuProAlaAsnAlaGlyGluLeuThrArgGlnArgIleGlu

ArgLeuAspAsnGlnThrAspGlyGluAsnValAspAlaLeuArgArgGluLeuGlnArgSer-465

473-PheArgThrAspGluIleLeuSerLysGlyValArgGlu-485

487-MetAlaIleAlaGluArgValLysArgThrGluIleLysAspLysSerLysVal-504

-377-

508-AlaArgIleGluAlaLeuGluLeu-515
 529-AlaGluAlaArgLysGluSerArgGlyAlaHisAlaSerAspAspHisProGluArgAspAspGluAsnTrp
 Met-553
 558-TyrHisSerAspAlaAsnThrLeuSerTyrLysProValHisThrLysProLeuSer-576
 581-LysProAlaLysArgValTyr-587

Hydrophilic Regions - Hopp-Woods
 26-LeuSerLysSerGlyLeu-31
 59-AsnValGlnGluAspArgTrpAsp-66
 71-AspThrValLysGly-75
 77-AspTrpLeuGlyAspGlnAspAlaIle-85
 105-ProPheAspArgValGluSerGlyLysIleTyr-115
 123-ThrAlaGluHisGlyLysArgAlaValGluArgAlaCysAlaValAlaAspArgThrGly-142
 168-AspLeuIleArgAspGluAsnGlyAsp-176
 183-MetGluMetGluThrGlyGlu-189
 231-IleProLeuGluAspMetGlu-237
 255-GluGlyValArgGlyGluGly-261
 267-AlaAspGlyGluArgPheMetGlu-274
 276-TyrAlaProThrValLysAspLeuAlaSerArgAspValValSer-290
 297-IleTyrGluGlyArgGlyCysGlyLysAsnLysAspHisVal-310
 315-AspHisIleGlyAlaGluLysIleMetGluLysLeuProGlyIleArgGluIleSer-333
 340-AspProIleLysAspProIle-346
 371-GlnGlyAspGluTyrGluValProVal-379
 421-PheIleIlysGluGlnSerAspTrpLysPro-430
 434-AsnAlaGlyGluLeuThrArgGlnArgIleGluArgLeuAspAsnGlnThrAspGlyGluAsnValAspAla
 LeuArgArgGluLeuGlnArg-464
 473-PheArgThrAspGluIleLeuSerLysGlyValArgGlu-485
 487-MetAlaIleAlaGluArgValLysArgThrGluIleLysAspLysSerLysVal-504
 508-AlaArgIleGluAlaLeuGluLeu-515
 529-AlaGluAlaArgLysGluSerArgGlyAlaHisAlaSerAspAspHisProGluArgAspAspGluAsnTrp
 Met-553
 581-LysProAlaLysArgValTyr-587
a011
AMPHI Regions - AMPHI
 58-IleArgLeuIleAsnAlaAla-64
 83-AlaIleLeuThrLys-87
 116-GluValLeuHisArgTyrLeuProGlnMetLeuSerAlaGly-129
 147-MetAlaXxxMetGlyLysValMetGlyVal-156

Antigenic Index - Jameson-Wolf
 1-MetArgThrHisArgLysThrCysSer-9
 17-ThrAlaSerLysProAlaValSerIleArgHisProSerGluAsnIleMet-33
 37-IleArgLeuThrGluAspMetLysThrAlaMetArgAlaLysAspGlnVal-53
 66-LysGlnPheGluValAspGluArgThrGluAlaAspAspAlaLysIle-81
 88-MetValLysGlnArgLysAspSerValLysIle-98
 100-ThrGluAlaGlyArgGlnAspLeuAlaAspLysGluAsnAlaGluIle-115
 127-SerAlaGlyGluIleArgThrAlaVal-135
 157-XxxLysThrArgLeuAlaGlyLysAlaAspMetGlyGluValAsnLysIleLeu-174

Hydrophilic Regions - Hopp-Woods
 1-MetArgThrHisArgLysThrCys-8
 37-IleArgLeuThrGluAspMetLysThrAlaMetArgAlaLysAspGlnVal-53
 66-LysGlnPheGluValAspGluArgThrGluAlaAspAspAlaLysIle-81
 88-MetValLysGlnArgLysAspSerValLysIle-98
 100-ThrGluAlaGlyArgGlnAspLeuAlaAspLysGluAsnAlaGluIle-115

129-GlyGluIleArgThrAlaVal-135

157-XxxLysThrArgLeuAlaGlyLysAlaAspMetGlyGluValAsnLysIleLeu-174

a012-1

AMPHI Regions - AMPHI

19-LysLeuLeuGluGlnLeuMetArgPheLeuGlnPheLeuSerGluPheLeuPheAlaLeuPheArgIle-41

48-ArgAlaLeuLysPheAlaArgArg-55

89-AsnAsnPhelLeArgHisThr-95

160-GlnGlyPheTyrGlyVal-165

179-GlyPheLeuArgPheGlyArgPheLeuProThrLeuLeuGlnThrLeu-194

Antigenic Index - Jameson-Wolf

42-PheThrHisLysSerAsnArgAlaLeuLysPheAlaArgArgHisHis-57

72-ArgTyrPheArgTyrAsnThrHisArgThrAspAsnArgLysArgSerGlyAsnAsnAsn-91

93-ArgHisThrArgHisHis-98

101-ThrAlaArgArgHisLeuIleAspGlyAspGlyGlnArgAsn-114

119-GlnThrPrcLysLeuArgSerArgGln-127

137-ThrPheGlnSerLysGlnAsnLeu-144

147-ArgLeuGlyAsnGlnLysHisArgArgAsnLeuMetThrGln-160

173-IleGlnHisLysLysAlaGly-179

Hydrophilic Regions - Hopp-Woods

45-LysSerAsnArgAlaLeuLysPheAlaArgArgHisHis-57

77-AsnThrHisArgThrAspAsnArgLysArgSerGly-88

101-ThrAlaArgArgHisLeuIleAspGlyAspGlyGlnArg-113

121-ProLysLeuArgSerArgGln-127

149-GlyAsnGlnLysHisArgArgAsnLeu-157

173-IleGlnHisLysLysAlaGly-179

a015

AMPHI Regions - AMPHI

25-ValPheXxxLeuTrpLysAsnProGluLysProLeuAlaGlyPheTrpLysAlaLeuProHis-45

107-MetCysCysLeuThrCys-112

Antigenic Index - Jameson-Wolf

29-TrpLysAsnProGluLysProLeu-36

90-MetArgAlaArgProArgSerThrLys-98

Hydrophilic Regions - Hopp-Woods

30-LysAsnProGluLysProLeu-36

90-MetArgAlaArgProArgSerThrLys-98

a018-2

AMPHI Regions - AMPHI

6-IleGlnHisLeuArg-10

100-AspGlyAlaAlaAla-104

152-ArgIleGlyAsnGlyTyr-157

Antigenic Index - Jameson-Wolf

1-MetValGluArgHisIleGln-7

9-LeuArgAsnGlyHis-13

19-ProSerGlnGlnValArg-24

27-PheGlyGlyArgThrTyrAspPheCysAlaAspGluAlaAla-40

67-TyrPheAlaAspAspLysPhe-73

78-LeuArgGlyAsnLeuArg-83

85-PheGlnThrAspLysAlaAspLeuArgThrGlyGluHisTyrAlaAspGlyAlaAla-103

108-AlaAspIleArgVal-112

136-ArgValAlaArgAsnLysAspMetArgAsnThrGlyLeuHisSerGlnArgIleGlyAsnGlyTyr-157

Hydrophilic Regions - Hopp-Woods

1-MetValGluArgHisIleGln-7
 35-CysAlaAspGluAlaAla-40
 67-TyrPheAlaAspAspLysPhe-73
 85-PheGlnThrAspLysAlaAspLeuArgThrGlyGluHisTyrAla-99
 108-AlaAspIleArgVal-112
 136-ArgValAlaArgAsnLysAspMetArgAsn-145
a019-2

AMPHI Regions - AMPHI

33-ProAlaAspAsnIleGlu-38
 55-GlyLysThrLeuAlaAspTyrGlyGlyTyrProSerAlaLeuAspAla-70
 80-AlaAlaTyrLeuGluAsnAlaGlyAsp-88
 90-AlaMetAlaGluAsnValArgAsnGluTrpLeuLysSer-102
 142-AlaAlaGluLeuValLysAsnThrGlyLysLeuProSerGlyCysThrLysLeuLeuGluGlnAlaAlaAla
 Ser-166
 173-AspAlaTrpArgArgValArg-179
 193-LeuAlaAlaAlaLeuGlySerProPheAspGlyGlyThrGlnGly-207
 215-AsnValIleGlyLysGluAlaArgLysSer-224
 229-AlaLeuLeuSerGluMet-234
 259-AspAlaValProAlaAlaLeuAspTyrTyrGly-268
 292-ArgArgTrpAspGluLeuAlaSerValIleSerHisMetProGluLysLeuGlnLys-310
 329-GlnGluAlaGluLysLeuTyrLysGlnAla-338
 451-ArgTyrIleSerPro-455
 495-GlnGlyLeuMetGlnValMet-501
 582-ArgAspTyrValLysLysValMet-589

Antigenic Index - Jameson-Wolf

3-ProProSerLeuIlys-7
 22-SerSerThrAsnThrLeuSerAlaAspLysThrProAlaAspAsnIleGluThrAlaAspLeuSerAlaSerV
 alProThrArgProAlaGluProGluGlyLysThrLeuAlaAspTyrGlyTyrProSerAla-67
 69-AspAlaValLysGlnLysAsnAspAla-77
 85-AsnAlaGlyAspSerAlaMet-91
 103-LeuGlyAlaArgArgGln-108
 115-GluTyrAlaLysLeuGluProAlaGlyArgAlaGlnGluValGluCysTyrAlaAspSerSerArgAsnAsp
 TyrThrArgAlaAlaGluLeuValLysAsnThrGlyLysLeuProSerGlyCys-156
 167-GlyLeuLeuAspGlyAsnAspAlaTrpArgArgValArgGly-180
 182-LeuAlaGlyArgGlnThrThrAspAlaArgAsn-192
 199-SerProPheAspGlyGlyThrGlnGlySerArgGluTyr-211
 217-IleGlyLysGluAlaArgLysSerProAsn-226
 232-SerGluMetGlyLeuSerGlyLeuSerLeuGluGlnArgSer-244
 254-GlnSerGlnAsnLeu-258
 266-TyrTyrGlyLysValAlaAspArgArgGlnLeuThrAspAspGlnIle-281
 287-AlaAlaLeuArgAlaArgArgTrpAspGlu-296
 304-MetProGluGlyLeuGlnLysSerProThr-313
 320-ArgSerArgAlaAlaThrGlyAsnThrGlnGluAlaGluLysLeuTyrLys-336
 339-AlaAlaThrGlyArgAsn-344
 350-AlaGlyGluLeuGlyArgLysIleAspThrArgAsnAsnValProAspAlaGlyLysAsnSerVal-37
2
 374-ArgMetAlaGluAspGlyAlaIleLys-382
 389-ArgAsnSerArgThrAlaGlyAspAlaLysMetArgArgGlnAlaGlnAla-405
 409-PheAlaThrArgGlyPheAspGluAspLysLeuLeu-420
 438-SerAlaGluArgThrAspArgLysLeuAsnTyr-448
 454-SerProPheLysAspThrValIle-461
 464-AlaGlnAsnValAsnValAspProAla-472

-380-

478-IleArgGlnGluSerArgPhe-484
 488-AlaGlnSerArgValGlyAla-494
 504-ThrAlaArgGluIleAlaGly-510
 520-TyrThrAlaAspGlyAsnIleArgMetGly-529
 535-AspThrLysArgArgLeuGlnAsnAsnGluVal-545
 550-GlyTyrAsnAlaGlyProGlyArgAlaArgArgTrpGlnAlaAspThrProLeuGlu-568
 579-SerGluThrArgAspTyrValLys-586
 606-LeuLysGlnArgMet-610

Hydrophilic Regions - Hopp-Woods

27-LeuSerAlaAspLysThrProAlaAspAsnIleGluThrAlaAspLeu-42
 46-ValProThrArgProAlaGluProGluGlyLysThrLeuAla-59
 69-AspAlaValLysGlnLysAsnAspAla-77
 85-AsnAlaGlyAspSerAlaMet-91
 103-LeuGlyAlaArgArgGln-108
 115-GluTyrAlaLysLeuGluProAlaGlyArgAlaGlnGluValGluCysTyrAlaAspSerSerArgAsnAsp
 TyrThrArgAlaAlaGluLeuValLysAsnThrGlyLysLeuProSerGlyCys-156
 170-AspGlyAsnAspAlaTrpArgArgValArgGly-180
 185-ArgGlnThrThrAspAlaArgAsn-192
 201-PheAspGlyGlyThrGlnGlySerArgGlu-210
 217-IleGlyLysGluAlaArgLysSerProAsn-226
 232-SerGluMetGluSer-236
 238-LeuSerLeuGluGlnArgSer-244
 270-ValAlaAspArgGlnLeuThrAspAspGlnIle-281
 287-AlaAlaLeuArgAlaArgArgTrpAspGlu-296
 304-MetProGluLysLeuGlnLys-310
 320-ArgSerArgAlaAlaThr-325
 327-AsnThrGlnGluAlaGluLysLeuTyrLys-336
 350-AlaGlyGluGluLeuGlyArgLysIleAspThrArgAsnAsnValProAspAlaGlyLys-369
 374-ArgMetAlaGluAspGlyAlaLys-382
 389-ArgAsnSerArgThrAlaGlyAspAlaLysMetArgArgGlnAlaGlnAla-405
 411-ThrArgGlyPheAspGluAspLysLeuLeu-420
 438-SerAlaGluArgThrAspArgLysLeu-446
 478-IleArgGlnGluSerArgPhe-484
 488-AlaGlnSerArgValGly-493
 504-ThrAlaArgGluIleAlaGly-510
 535-AspThrLysArgArgLeuGlnAsn-542
 554-GlyProGlyArgAlaArgArgTrpGlnAla-563
 579-SerGluThrArgAspTyrValLys-586
 606-LeuLysGlnArgMet-610
a023

AMPHI Regions - AMPHI

42-LysGluTyrSerAlaTrpGlnAlaPhePheSerGlnThrTrpValLysValPheThrGlnValSerPheIleA
 laValPheLeuHisAlaTrpValGly-74
 82-TyrXxxLysProPhe-86

Antigenic Index - Jameson-Wolf

1-MetValGluArgLysLeuThr-7
 41-ProLysGluTyrSer-45
 81-AspTyrXxxLysProPheGlyVal-88

Hydrophilic Regions - Hopp-Woods

1-MetValGluArgLysLeuThr-7

a025

AMPHI Regions - AMPHI

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15-AlaAlaGlnLeuGlyGlyCysProThrGlnHis-25
 36-MetGlnThrValProSerAlaProValTyrAsnProTyrGlyAlaThrProTyr-53
 111-AspThrValTyrLysIleSerLysCysTyrHisIle-122

126-AspPheArgAlaTrpAsnGlyMetThrAsp-135
 140-IleGlyGlnIleValLysVal-146
 206-AspPheArgAlaTrpAsnGlyMetThrAsp-215
 220-IleGlyGlnIleValLysVal-226
 248-AlaValGlnThrProValLysProAlaAla-257

261-ValGlnSerAlaProGlnPro-267
 290-SerGlyThrArgSer-294
 307-LysValValAlaAspPhe-312
 343-GlyLeuArgGlyTyrGlyAsn-349

Antigenic Index - Jameson-Wolf
 22-ProThrGlnHisPro-26
 33-AsnSerGlyMetGlnThr-38

58-AlaAlaAsnAspAlaPro-63

108-ValArgGlyAspThrValTyrLysIleSerLys-118

120-TyrHisIleSerGlnAspAspPheArgAla-129

131-AsnGlyMetThrAspAsnThrLeu-138

144-ValLysValLysProAlaGly-150
 157-AlaAlaValLysSerArgProAla-164
 188-ValArgGlyAspThr-192
 195-AsnIleSerLysArgTyrHisIleSerGlnAspAspPheArgAla-209

211-AsnGlyMetThrAspAsnThrLeu-218

224-ValLysValLysProAlaGly-230
 237-AlaAlaValLysSerArgProAla-244

252-ProValLysProAlaAlaGlnProProValGlnSerAlaProGlnPro-267
 270-ProAlaAlaGluAsnLysAlaVal-277
 280-ProAlaProGlnSerProAlaAlaSerProSerGlyThrArgSerValGly-296

302-ArgProThrGlnGlyLysValValAlaAspPheGlyGlyAsnAsnLysGlyValAsp-320
 333-AlaAspGlyLysVal-337
 342-SerGlyLeuArgGlyTyrGly-348

363-TyrGlyHisAsnGln-367
 370-LeuValGlyGluGlyGlnGlnValLysArgGlyGlnGln-382
 387-GlyAsnThrGluAlaSerArgThrGlnLeu-396

398-PheGluValArgGlnAsnGlyLysProValAsnProAsnSer-411

Hydrophilic Regions - Hopp-Woods

108-ValArgGlyAspThr-112

123-SerGlnAspAspPheArg-128
 144-ValLysValLysPro-148
 157-AlaAlaValLysSerArgProAla-164
 188-ValArgGlyAspThr-192
 200-TyrHisIleSerGlnAspAspPheArg-208
 224-ValLysValLysPro-228
 237-AlaAlaValLysSerArgProAla-244
 253-ValLysProAlaAla-257
 270-ProAlaAlaGluAsnLysAlaVal-277
 290-SerGlyThrArgSer-294
 313-GlyGlyAsnAsnLysGlyValAsp-320
 333-AlaAspGlyLysVal-337
 373-GluGlyGlnGlnValLysArgGlyGln-381
 389-ThrGluAlaSerArgThr-394
 400-ValArgGlnAsnGlyLysProValAsn-408

a032

AMPHI Regions - AMPHI
 11-LeuArgArgProLeuArgGln-17
 67-SerPheAlaGlyAsnValTyrProArgLeu-76
 114-ValHisGlyGlnIleGlnHisProValGlnProPheLeuArg-127
 134-LeuGlyIleLeuArgArgPheAspVal-142

Antigenic Index - Jameson-Wolf

1-MetArgArgAsnVal-5
 10-ValLeuArgArgProLeuArg-16
 28-ArgAlaValProAlaGlyLysGlnGlyPhe-37
 41-CysArgLeuThrGlnArgGln-47
 57-AlaGlyGlnArgAsnLeuPro-63
 104-ValIleAlaHisArgGlnArgVal-111
 138-ArgArgPheAspValGlyGlyArgValGlyMet-148
 151-ThrAlaPheAspGlnProGlyAla-158
 160-LeuProProArgArgGlnIleAlaArgGlnArgProArgIleGlnThrAlaLeuArgGlnProProGlnArg
 ArgArgLysIleAlaLeu-189
 203-HisLeuCysGlnGlnArgLysGln-210
 236-ValLysMetArgArgLysProValGlnAsnHisAsnArgProThrGlnIleSerLysLysGln-256

Hydrophilic Regions - Hopp-Woods

1-MetArgArgAsnVal-5
 10-ValLeuArgArgProLeuArg-16
 28-ArgAlaValProAlaGlyLys-34
 41-CysArgLeuThrGln-45
 104-ValIleAlaHisArgGlnArgVal-111
 138-ArgArgPheAspValGlyGly-144
 161-ProProArgArgGlnIleAlaArgGlnArgProArgIle-173
 177-LeuArgGlnProProGlnArgArgLysIleAlaLeu-189

-383-

203-HisLeuCysGlnGlnArgLysGln-210
 236-ValLysMetArgArgLysProValGlnAsnHisAsnArgProThrGlnIleSerLysLysGln-256
a033-2
AMPHI Regions - AMPHI
 6-GlnTyrGlyGlyLeuAlaGlyPheProLysArgCysGluSerGlu-20
 64-GlyGlnAlaPheGluAlaLeuAsnCys-72
 95-ValGlyAlaLeuProLysTyrLeuAlaSerAsnValValArgAspMetHisGlyLeuLeuSerThrVal-117
 120-GlnThrGlyLysValLeuAspLysIleProGlyAlaMetGlu-133
 142-IleLysThrLeuAlaGlu-147
 157-SerLeuPheGluAsnPhe-162
 168-GlyProValAspGlyHisAsnValGluAsnLeuValAspValLeuGluAspLeuArgGlyArg-188
 207-AlaGluAsnAspPro-211

213-LysTyrHisAlaValAlaAsnLeuProLysGluSerAlaAla-226
 242-TyrThrGlnValPheGlyLys-248
 280-PheProAspArgTyrPheAspVal-287
 307-LysProValValAlaIleTyrSer-314

316-PheLeuGlnArgAlaTyrAspGlnLeu-324
 357-AspLeuSerPheLeuArgCysIleProAsnMetIleVal-369
 390-AlaProAlaAlaValArgTyrProArg-398
 407-SerAspGlyMetGluThrValGlu-414
 419-IleIleArgArgGlu-423
 432-PhcGlySerMetValAla-437
 453-MetArgPheValLysProIleAspGluGlu-462
 469-ArgSerHisAspArgIle-474
 489-AlaValLeuGluValLeu-494
 510-AspThrValThrGlyHisGly-516

518-ProLysLeuLeu-522

Antigenic Index - Jameson-Wolf
 11-AlaGlyPheProLysArgCysGluSerGluTyrAspAla-23

28-HisSerSerThrSerIle-33
 41-alalaAspLysGlnLeuGlySerAspArgArgSerVal-53
 57-GlyAspGlyAlaMetThr-62
 72-CysAlaGlyAspMetAspVal-78
 85-AsnAspAsnGluMetSerIle-91
 105-AsnValValArgAspMetHisGly-112
 117-ValLysAlaGlnThrGlyLysValLeuAspLysIleProGly-130
 134-PheAlaGlnLysValGluHisLysIleLysThrLeuAlaGluGluAlaGluHisAlaLysGln-154
 166-TyrThrGlyProValAspGlyHisAsn-174
 181-ValLeuGluAspLeuArgGlyArgLysGlyPro-191
 197-IleThrLysLysGlyAsnGlyTyrLysLeuAlaGluAsnAspProValLys-213
 220-LeuProLysGluSerAlaAla-226

228-MetProSerGluProLysProAlaAlaLysProThrTyr-242
 253-ArgAlaAlaAlaAspSerArgLeu-260
 266-AlaMetArgGluGlySerGlyLeuValGluPheGluGlnArgPheProAspArgTyrPhe-285
 345-ValGlyAlaAspGlyProThrHis-352
 370-AlaAlaProSerAspGluAsnGluCysArg-379
 395-ArgTyrProArgGlyThrGlyThr-402

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406-ValSerAspGlyMetGluThrValGluIleGlyLysGlyIleIleArgArgGluGlyGluLysThrAla-42
 8
 457-LysProIleAspGluGluLeuIle-464
 467-LeuAlaArgSerHisAspArgIleValThrLeuGluGluAsnAlaGluGlnGlyGlyAlaGly-487
 512-ValThrGlyHisGlyAspProLysLysLeuLeuAspAspLeuGlyLeu-527
 530-GluAlaValGluArgArgValArg-537
 540-LeuSerAspArgAspAlaAlaAsn-547

Hydrophilic Regions - Hopp-Woods

13-PheProLysArgCysGluSerGluTyrAsp-22
 41-AlaAlaAspLysGlnLeuGlySerAspArgArgSerVal-53
 74-GlyAspMetAspVal-78
 85-AsnAspAsnGluMetSerIle-91
 106-ValValArgAspMetHis-111
 123-LysValLeuAspLysIleProGly-130
 134-PheAlaGlnLysValGluHisLysIleLysThrLeuAlaGluGluAlaGluHisAlaLysGln-154
 181-ValLeuGluAspLeuArgGlyArgLysGlyPro-191
 197-IleThrLysLysGlyAsnGly-203

205-LysLeuAlaGluAsnAspProValLys-213
 220-LeuProLysGluSerAlaAla-226

228-MetProSerGluLysGluProLysProAlaAla-238 .
 253-ArgAlaAlaAlaAspSerArgLeu-260
 266-AlaMetArgGluGlySerGly-272

274-ValGluPheGlnArgPheProAspArgTyrPhe-285
 372-ProSerAspGluAsnGluCys-378
 408-AspGlyMetGluThrValGluIleGlyLysGlyIleIleArgArgGluGlyGluLysThrAla-428
 457-LysProIleAspGluGluLeuIle-464
 467-LeuAlaArgSerHisAspArgIleValThrLeuGluGluAsnAlaGluGlnGlyGly-485
 513-ThrGlyHisProLysLeuLeuAsp-523

530-GluAlaValGluArgArgValArg-537
 540-LeuSerAspArgAspAlaAlaAsn-547

a034**AMPHI Regions - AMPHI**

35-LeuAspHisAlaAla-39
 52-AsnLeuGluGlnMetArgAlaIleMetGluAlaAlaAspGln-65
 94-AlaValGluGluPheProHisIlePro-102
 152-ThrValValAsnPheSer-157
 168-IleGlyValLeuGlyAsnLeuGluThrGly-177
 186-GlyAlaValGlyLysLeuSer-192
 197-LeuThrSerValGluAspAlaValArgPheValLysAspThrGly-211
 226-TyrLysPheThrArgProProThrGly-234
 236-ValLeuArgIleAspArgIleLysGluIleHisGlnAlaLeu-249
 261-SerValProGlnGluTrpLeuLysValIleAsnGluTyrGlyGlyAsnIleGlyGluThrTyrGlyValPro
 ValGluGluIleValGluGlyIleLysHisGly-295
 314-ArgArgTyrLeuAlaGlu-320
 330-LeuSerLysThrIleGluAlaMetLys-338
 360-ValSerLeuGluLysMetAlaAsnArgTyrAlaLysGlyGluLeuAsnGlnIleVal-378

Antigenic Index - Jameson-Wolf

20-LeuProLysGluThrGln-25

37-HisAlaAlaGluAsnSerTyrGly-44
 54-GluGlnMetArgAlaIleMetGluAlaAlaAspGlnVal-66
 75-SerAlaGlyAlaArgLysTyrAla-82
 106-HisGlnAspHisGlyAlaSerProAspValCysGlnArgSerIle-120
 129-MetAspGlySerLeuMetGluAspGlyLysThrProSerSerTyrGluTyr-145
 164-ValGluGlyGluIle-168
 173AsnLeuGluThrGlyGluAlaGlyGluGluAspGlyVal-185
 191-LeuSerHisAspGln-195
 199-SerValGluAspAlaValArgPheValLysAspThrGlyValAsp-213
 221-ThrSerHisGlyala-225
 227-LysPheThrArgProProThrGlyAspValLeuArgIleAspArgIleLysGluIleHis-246
 258-GlySerSerSerValPro-263
 271-AsnGluTyrGlyGlyAsnIleGlyGlu-279
 287-GluIleValGluGlyIleLysHisGlyValArgLysValAsnIleAspThrAspLeuArgLeuAlaSerThr
 GlyAlaVal-313
 316-TyrLeuAlaGluAsnProSerAspPheAspProArgLysTyrLeuSerLysThrIleGluAlaMetLys-33
 8
 350-CysGluGlyGlnAlaGlyLysIleLysProValSerLeuGluLysMetAlaAsnArgTyrAlaLysGlyGlu
 Leu-374

Hydrophilic Regions - Hopp-Woods

54-GluGlnMetArgAlaIleMetGluAlaAlaAspGlnVal-66
 76-AlaGlyAlaArgLysTyrAla-82
 108-AspHisGlyAlaSerProAspValCysGln-117
 132-SerLeuMetGluAspGlyLysThrProSer-141
 164-ValGluGlyGluIle-168
 175-GluPheGlyAlaGlyGluGluAspGlyVal-185
 199-SerValGluAspAlaValArgPheValLysAspThrGlyVal-212
 235-AspValLeuArgIleAspArgIleLysGluIleHis-246
 287-GluIleValGluGlyIleLysHisGlyValArgLysValAsnIleAspThrAspLeuArgLeu-307
 320-AsnProSerAspPheAspProArgLysTyrLeuSerLysThrIleGluAlaMetLys-338
 352-GlyGlnAlaGlyLysIleLysProValSerLeuGluLysMetAlaAsnArgTyrAlaLysGlyGluLeu-37
 4
a036

AMPHI Regions - AMPHI

6-AlaValTyrSerAlaCysAlaAla-13
 29-GlyArgCysValAsnGlnTyr-35
 59-SerSerGlyArgPheCysGlnThrIleLys-68
 106-AlaAlaSerAlaAlaGlnSer-112
 213-SerAlaCysArgThrMetHisLysThrLeuArgProTyrVal-226
 250-ArgLeuLysGluTyr-254

Antigenic Index - Jameson-Wolf

16-ProAlaArgThrSerSerSerArgArgCysValSerSerGlyArgCysValAsnGlnTyrSerSerArgAlaA
 spAla-41
 43-ProTrpArgArgHisSerGlyAla-50
 55-CysSerSerAspSerSerGlyArgPhe-63
 73-ProSerPheSerAlaArgLysThrCysSerAspGlyGluThrSerAlaAspSerAsnTrpArg-93
 96-HisAlaAspGlyLeuGlnThrAlaSerSer-105
 112-SerAlaXxxThrAlaArgMetPheThr-121
 132-GlnSerArgArgPheCysCysGlyArgArgAlaAlaArgArgValProGlnArgArgGluAsnArgLeu
 GlnProProAspXxxGlySerArgArgArgSerAlaTyrArgValCysLeuArgArgAlaAspGlyPheProAlaA
 rgThrHisCysArgCysArgLeuLysArgArgIleLeu-193
 199-LeuProProAspArgProAspAsnArgSerAsnGlyGlySerAlaCysArgThrMetHisLysThrLeu
 ArgProTyrValArgProGlnArgGlnGlyCys-233

239-AlaAlaArgArgHisArgAlaArgValArgArgLeuLysGluTyrGlnThr-256
 260-AsnLeuAlaProArgArgCysArgTyrAla-269

Hydrophilic Regions - Hopp-Woods

18-ArgThrSerSerArgArgCysValSerSer-28
 35-TyrSerSerArgAlaAsp-40
 45-ArgArgHisSerGly-49
 55-CysSerSerAspSerSerGlyArg-62
 75-PheSerAlaArgLysThrCysSerAspGlyGluThrSerAla-88
 114-XxxThrAlaArgArgMetPhe-120
 135-ArgCysCysGlyArgArgAlaAlaArgValProGlnArgArgGluAsnArgLeuGlnProPro
 AspXxxGlySerArgArgSerAlaTyr-168
 171-CysLeuArgArgAlaAspGlyPhePro-179
 182-ThrHisCysArgCysArgLeuLysArgArgIleLeu-193
 200-ProProAspArgProAspAsnArgSerAsnGlyGly-211
 217-ThrMetHisLysThrLeuArgProTyrValArgArgProGlnArgGlnGly-232
 239-AlaAlaArgArgHisArgAlaArgValArgArgLeuLysGluTyrGln-255
 262-AlaProArgArgCysArgTyr-268

a038**AMPHI Regions - AMPHI**

100-GluAlaLysAspHis-104
 157-GluLysGlyThrGlyGluLeuSerAlaValGlnGluValGluLys-171
 178-AlaProIleAlaSerLeuAsn-184
 195-GluPheGlyGlnPheLeuGluProValArgAlaTyrArgArgGlnTyrGlyVal-212

Antigenic Index - Jameson-Wolf

2-ThrAspPheArgGlnAspPhe-8
 22-GluPheThrThrLysAlaGlyArgArgSerPro-32
 38-GlyLeuPheAsnAspGlyLeu-44
 58-IleGluSerGlyIleArg-63
 85-LeuAlaGluLysGlyVal-90
 96-TyrAsnArgLysGluAlaLysAspHisGlyGluGlyGly-108
 125-ValIleSerAlaGlyThrSerValArgGluSerIleLysLeuIleGluAlaGluGlyAlaThr-145
 153-LeuAspArgMetGluLysGlyThrGlyGlu-162
 167-GlnGluValGluLysGlnTyrGlyLeu-175
 191-GlnAsnAsnProGluPheGlyGln-198
 203-ValArgAlaTyrArgArgGlnTyrGlyValGlu-213

Hydrophilic Regions - Hopp-Woods

2-ThrAspPheArgGlnAspPhe-8
 22-GluPheThrThrLysAlaGlyArgArgSer-31
 85-LeuAlaGluLysGlyVal-90
 96-TyrAsnArgLysGluAlaLysAspHisGlyGlu-106
 130-ThrSerValArgGluSerIleLysLeuIleGluAlaGluGlyAlaThr-145
 153-LeuAspArgMetGluLysGlyThrGlyGlu-162
 167-GlnGluValGluLysGlnTyr-173
 204-ArgAlaTyrArgArgGlnTyrGly-211

a040**AMPHI Regions - AMPHI**

14-AlaAlaProTyrIle-18
 28-AlaGlyIleAspAsp-32
 38-AspThrLeuAsnLysPhe-43
 78-ProHisTyrCysArgGlyLeuArgValThrAspGlu-89
 92-LeuGluGlnAlaGlnGlnPheAlaGly-100
 113-SerValSerGlyPheAlaArgAlaPro-121

134-ArgProIleGlyValIleAspGly-141
 146-TyrAlaGlyValIleArg-151
 207-LeuSerAspGlyIleSerArgProAsp-215
 226-GluAlaGlnSerLeuAlaGluHisAla-234
 244-SerAlaValLalaAlaLeuGluGly-251
 277-IleGlyThrSerIle-281
 289-IleArgGlnAlaHisSerGlyAspIleProHisIleAlaAlaLeuIleArgProLeuGlu-308
 320-TyrLeuGluAsnHisIleSerGluGlyAspThrLeuAsn-330
 338-TyrGlyCysAlaAlaLeuLysThrPheAlaGluAlaAsp-350
 371-ArgLeuLeuAlaHisIle-376
 386-SerArgLeuPheAla-390

Antigenic Index - Jameson-Wolf

11-PheArgGluAlaAlaProTyrIleArgGlnMetArgGlyLysThrLeu-26
 29-GlyIleAspAspArgLeuLeuGluGlyAspThrLeuAsn-41
 65-HisPheLeuAspArgHisAlaAlaAlaGlnGlyArgThrProHisTyrCysArgGlyLeuArgValThrAspG
 luThrSerLeuGluGlnAlaGln-96
 101-ThrValArgSerArgPheGlu-107
 119-ArgAlaProSerVal-123
 140-AspGlyThrAspMetGluTyr-146
 150-IleArgLysThrAspThrAlaAla-157
 173-LeuGlyHisSerTyrSerGlyLysThrPhe-182
 208-SerAspGlyIleSerArgProAspGlyThrLeu-218
 224-AlaGlnGluAlaGlnSerLeuAlaGluHisAlaGlyGlyGluThrArgArgLeuIle-242
 249-LeuGluGlyGlyVal-253
 261-GlyAlaAlaAspGlySerLeuLeu-268
 272-PheThrArgAsnGlyIleGlyThrSerIleAlaLysGluAlaPheVal-287
 289-IleArgGlnAlaHisSerGlyAspIle-297
 305-ArgProLeuGluGluGlnGly-311
 313-LeuLeuHisArgSerArgGluTyrLeu-321
 331-LeuGluHisAspGlyAsnLeuTyr-338
 345-ThrPheAlaGluAlaAspCysGlyGlu-353
 361-ProGlnAlaGlnAspGlyGlyTyrGlyGluArgLeu-372
 377-IleAspLysAlaArgGly-382
 393-ThrAsnThrGlyGlu-397
 402-ArgGlyPheGlnThrAlaSerGluAspGluLeuProGluThrArgArgLysAspTyrArgSerAsnGlyArg
 AsnSerHisIleLeu-430

Hydrophilic Regions - Hopp-Woods

11-PheArgGluAlaAlaPro-16
 19-ArgGlnMetArgGlyLysThr-25
 29-GlyIleAspAspArgLeuLeuGluGlyAspThrLeuAsn-41
 65-HisPheLeuAspArgHisAlaAlaAlaGlnGlyArgThr-77
 84-LeuArgValThrAspGluThrSerLeuGluGln-94
 102-ValArgSerArgPheGlu-107
 140-AspGlyThrAspMetGluTyr-146
 150-IleArgLysThrAspThrAlaAla-157
 210-GlyIleSerArgProAspGly-216
 224-AlaGlnGluAlaGlnSerLeuAlaGlu-232
 234-AlaGlyGlyGluThrArgArgLeuIle-242
 291-GlnAlaHisSerGlyAsp-296
 305-ArgProLeuGluGluGlnGly-311
 315-HisArgSerArgGluTyrLeu-321
 345-ThrPheAlaGluAlaAspCysGlyGlu-353
 362-GlnAlaGlnAspGlyGlyTyrGlyGlu-370

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377-IleAspLysAlaArgGly-382
 402-ArgGlyPheGlnThrAlaSerGluAspGluLeuProGluThrArgArgLysAspTyrArgSerAsnGlyArg
 Asn-426
 a041-1

AMPHI Regions - AMPHI

6-AspProTyrArgHisPheGluAsnLeuAspSerAlaGluThr-19
 45-AspGlyIleLeuAla-49

78-LysGlyValTyrArgValCysThrAlaAla-87
 102-ValAlaAspPheAspGluLeuLeu-109
 117-GlyValSerHisLeuValGluGlnProAsn-126
 218-MetValAsnAlaTrpArgTyrLeuAsp-226
 232-IleAspLeuIleGluAlaSer-238
 258-LeuAsnLeuProAsnAspCysAspValValGlyTyrLeu-270
 317-GlnAlaLeuGluSerValGluThr-324
 331-AlaSerLeuLeuGluAsnValGlnGlyArg-340
 354-ThrGluLeuProArgLeuProSer-361
 382-AspPheThrThrProLeu-387
 405-GlnProGlnGlnPhe-409
 451-GlyPheGlyIleProGluLeuProHisTyrLeuGlySerIleGlyLys-466
 493-AlaAlaGlnGlyIleSerLysHisLysSerValAspAspLeuLeuAlaValValSer-511

519-SerSerProGluHis-523
 541-ValArgGluProGlnSer-546
 556-LeuThrAspMetIleArgTyr-562
 571-TrpThrAspGluTyrGlyAsnProGlnLysTyrGlu-582
 591-LeuSerProTyrHisAsnLeuSerAspGlyIleAspTyrProPro-605
 620-AlaHisAlaLeuLys-624
 645-GlyHisThrGlyAsnGlyThrGlnArgGluAla-655

Antigenic Index - Jameson-Wolf

1-MetLysSerTyrProAspProTyrArgHisPheGluAsnLeuAspSerAlaGluThrGln-20
 26-AlaAsnAlaGluThrArgAlaArgPheLeuAsnAsnAspLysAlaArgAlaLeuSerAspGly-46
 51-LeuGlnAspThrArgGlnIleProPhe-59

61-GlnGluHisArgAlaArg-66
 72-GlnAspAlaGluTyrProLysGlyVal-80
 89-TyrArgSerGlyTyrProGluTrp-96
 104-AspPheAspGluLeuLeuGlyAspAspValTyr-114
 123-GluGlnProAsnArg-127
 132-LeuSerLysSerGlyGlyAspThr-139
 145-ValAspLeuGluAlaGlyGluLeuValGlu-154
 161-AlaGlyLysAsnHisValSerTrpArgAspGluAsnSerVal-174
 178-ProAlaTrpAspGluArgGlnLeuThrGluSerGlyTyrProArgGluValTrpLeuValGluArgGlyLys
 SerPheGluGluSerLeu-207
 212-IleAlaGluAspGlyMet-217
 223-ArgTyrLeuAspProGlnGlySerProIleAspLeuIleGluAlaSerAspGlyPheTyr-242
 250-SerAlaGluGlyGluAlaLysProLeuAsnLeuProAsnAspCysAspVal-266
 278-LeuArgLysAspTrpHisArgAlaAsnGlnSerTyrProSer-291
 298-LysLeuAsnArgGlyGluLeuGly-305
 312-AlaProAsnGluThrGlnAla-318

320-GluSerValGluThrThrLys-326

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337-ValGlnGlyArgLeuLysAla-343

345-ArgPheThrAspGlyLysTrpGlnGluThrGluLeuProArgLeuProSerGly-362
 365-GluMetThrAspGlnProTrpGlyGly-373
 401-ValMetArgArgGlnProGlnGlnPheAspSerAspGlyIleAsn-415
 422-ThrSerAlaAspGlyGluArgIle-429
 435-GlyLysAsnAlaAlaProAspMet-442
 479-AsnIleArgGlyGlyGluPheGlyProArgTrpHis-491
 496-GlyIleSerLysHisLysSerValAspAsp-505
 512-AspLeuSerGluArgGlyIleSerSerProGluHis-523
 528-GlyGlySerAsnGly-532
 540-PheValArgGluProGlnSerIleGlyAla-549
 568-GlySerSerTrpThrAspGluTyrGlyAsnProGlnLysTyrGluValCysLysArgArgLeuGlyGluLeu
 SerProTyr-594
 596-AsnLeuSerAspGlyIleAspTyrPro-604
 610-ThrSerLeuSerAspAspArgValHis-618
 627-AlaLysLeuArgGluThrSerProGlnSer-636
 639-TyrSerProAspGlyGlyHisThrGlyAsnGlyThrGlnArgGluAlaAlaAspGluLeu-659

Hydrophilic Regions - Hopp-Woods

3-SerTyrProAspProTyrArgHis-10

12-GluAsnLeuAspSerAlaGluThr-19
 26-AlaAsnAlaGluThrArgAlaArgPheLeuAsnAsnAspLysAlaArgAlaLeuSer-44
 52-GlnAspThrArgGln-56
 61-GlnGluHisArgAlaArg-66
 72-GlnAspAlaGluTyrPro-77
 104-AspPheAspGluLeuLeuGly-110
 134-LysSerGlyGlyAsp-138
 145-ValAspLeuGluAlaGlyGluLeuValGlu-154
 166-ValSerTrpArgAspGluAsnSer-173
 180-TrpAspGluArgGlnLeuThr-186
 198-GluArgGlyLysSerPheGluGluSerLeu-207
 212-IleAlaGluAspGlyMet-217
 233-AspLeuIleGluAlaSerAsp-239

251-AlaGluGlyGluAlaLysPro-257
 278-LeuArgLysAspTrpHisArg-284

298-LysLeuAsnArgGlyGluLeuGly-305
 320-GluSerValGluThrThrLys-326
 337-ValGlnGlyArgLeuLysAla-343

350-LysTrpGlnGluThrGluLeuProArg-358
 401-ValMetArgArgGlnProGlnGlnPheAspSerAspGlyIleAsn-415
 424-AlaAspGlyGluArg-428
 436-LysAsnAlaAlaProAsp-441
 481-ArgGlyGlyGluPheGly-487
 496-GlyIleSerLysHisLysSerValAspAsp-505
 512-AspLeuSerGluArgGlyIleSerSer-520

540-PheValArgGluProGlnSer-546
 571-TrpThrAspGluTyrGlyAsn-577

579-GlnLysTyrGluValCysLysArgArgLeuGlyGlu-590

-390-

612-LeuSerAspAspArgValHis-618
 627-AlaLysLeuArgGluThrSer-633
 650-GlyThrGlnArgGluAlaAlaAspGluLeu-659
a042-1

AMPHI Regions - AMPHI

17-AlaLeuSerAsnThrSerThr-23
 33-AlaValArgSerMetMetLysIle-40
 138-SerProLeuValArgIleLeuProLeuSer-147
 151-SerMetValValAlaPhePheAlaAsn-159

Antigenic Index - Jameson-Wolf

14-ArgThrSerAlaLeuSerAsnThrSerThrAlaAlaGlyProSerCys-29
 49-TyrSerLysGluThrGlyCysProCysProSerLeuArgLysAspSerSerThrGlyGlyArgProMetSerP
 roCys-74
 77-LeuAlaAsnArgAspCysValProLysAlaAspThr-88
 93-ThrAspSerThrSerProArgProLeu-101
 122-AlaArgAlaSerLeuProLysIleArgAlaLysVal-133
 160-CysSerTyrAlaSerAlaProGlyPro-168

Hydrophilic Regions - Hopp-Woods

49-TyrSerLysGluThrGlyCys-55
 59-SerLeuArgLysAspSerSerThrGlyGlyArgProMet-71
 78-AlaAsnArgAspCysValProLysAlaAspThr-88
 94-AspSerThrSerProArg-99
 125-SerLeuProLysIleArgAlaLysVal-133
a043-2
AMPHI Regions - AMPHI
 24-ValGluProSerArg-28
 36-HisGlyGlyLeuAspGlyAlaAlaGlyPheAspGluGlyGluArg-50
 59-AlaSerGlyAspGlyPhe-64
 83-AlaGlyAspPheGlyAspGlyGlnArg-91

Antigenic Index - Jameson-Wolf

1-MetProProAlaPro-5
 11-IleArgArgGlnLysSerValMetProSerGluArgPheValGluProSerArg-28
 35-ValHisGlyGlyLeuAspGlyAlaAlaGlyPheAspGluGlyGluArgValPhe-52
 56-AlaAlaGlnAlaSerGlyAspGlyPheAla-65
 79-GlnSerAspAlaAlaGlyAspPheGlyAspGlyGlnArgThrGlyGlu-94
 96-ValLeuGlnAspValGlyGly-102
 116-AlaGluGlyGluAlaGln-121

Hydrophilic Regions - Hopp-Woods

11-IleArgArgGlnLysSerValMetProSerGluArgPheValGluProSerArg-28
 43-AlaGlyPheAspGluGlyGluArgValPhe-52
 81-AspAlaAlaGlyAspPheGlyAspGlyGlnArgThrGly-93
 116-AlaGluGlyGluAlaGln-121
a046
AMPHI Regions - AMPHI
 6-ArgProThrSerSerPro-11
 46-ThrSerCysSerGlyLeuMetValSer-54
 64-PheSerLeuPheSerSer-69
 113-LysSerAlaSerSer-117
 143-SerCysAsnAlaPheSerSer-149
 155-ThrSerLeuLeuGlyMetAlaAlaArgPheCysAlaThrVal-168

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Antigenic Index - Jameson-Wolf

6-ArgProThrSerSerProProArgArgAlaCys-16
 20-IleArgThrArgSerSerAlaLysArgLysThrCysAsnAlaProGlyGlnSerIleArgProAlaSerCysS
 er-44
 57-ProAsnMetGluArgLeuPro-63
 75-SerArgTyrSerLeuGluArgThrArgAlaMetArgProGlyMetLeuAsnArgSerAlaAla-95
 105-SerLeuArgGluSerAlaSerSerLysSerAlaSerSerAlaProAlaArgSerAsnValLysGlyAspAla
 ProLeuProLysThrValTrpThrSerArgArgLeuProVal-142
 169-GluProThrCysProLeuProLys-176

Hydrophilic Regions - Hopp-Woods

7-ProThrSerSerProProArgArgAlaCys-16
 20-IleArgThrArgSerSerAlaLysArgLysThrCysAsn-32
 36-GlnSerIleArgProAlaSer-42
 58-AsnMetGluArgLeuPro-63
 75-SerArgTyrSerLeuGluArgThrArgAlaMetArg-86
 105-SerLeuArgGluSerAlaSerSerLysSerAlaSer-116
 118-AlaProAlaArgSerAsnValLysGlyAspAlaProLeu-130
 a047

AMPHI Regions - AMPHI

17-IleAlaAspIleAlaGlnAspLeuProAspGlyAla-28
 62-AlaGluAsnIleGlyAlaVal-68
 93-ArgLeuAlaLysGlnLeuGlu-99
 141-TyrIleAspGluIleAspValPhe-148
 161-SerAlaIleLeuAla-165
 185-LeuLeuGluGlyAsn-189
 202-IleGlySerIleLeuAla-207
 247-SerGlyIleLysTrpProGluGlyCys-255
 257-IleAlaAlaValValArgAlaGlyThrGly-266
 293-IleLeuAsnGluLeuGluLysLeuIle-301

Antigenic Index - Jameson-Wolf

5-GlnAlaArgArgGlyGlyLeuLeu-12
 20-IleAlaGlnAspLeuProAspGlyAlaAsp-29
 36-TyrArgAsnAsnArgLeu-41
 51-IleGluGlyAspGlu-55
 70-ProGluLeuArgProLysGluThrSerThrArgArgIleMet-83
 86-GlyGlyGlyAsnIle-90
 96-LysGlnLeuGluHis-100
 106-IleIleGluCysArgProArgArgAlaGluTrpIle-117
 119-GluAsnLeuAspAsnThrLeu-125
 130-SerAlaThrAspGluThrLeuLeuAspAsnGluTyrIleAspGluIleAsp-146
 152-ThrAsnAspAspGluSerAsnIle-159
 168-LeuGlyAlaLysArgVal-173
 178-AsnArgSerSerTyr-182
 186-LeuGluGlyAsnLysIle-191
 208-HisIleArgArgGlyAspIleVal-215
 219-ProIleArgArgGlyThrAlaGluAlaIleGlu-229
 232-AlaHisGlyAspLysLysThrSer-239
 242-IleGlySerGlyIleLysTrpProGluGlyCysHis-256
 262-ArgGlaGlyThrGlyGluThr-268
 277-ValIleGlnAspGlyAspHis-283
 288-ValSerArgArgArgIleLeuAsnGluLeuGluLys-299

Hydrophilic Regions - Hopp-Woods

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5-GlnAlaArgArgGlyGly-10
 20-IleAlaGlnAspLeuProAspGlyAlaAsp-29
 51-IleGluGlyAspGlu-55
 70-ProGluLeuArgProLysGluThrSerThrArgArgIleMet-83
 106-IleIleGluCysArgProArgArgAlaGluTrpIle-117
 130-SerAlaThrAspGluThrLeuLeu-137
 140-GluTyrIleAspGluIleAsp-146
 152-ThrAsnAspAspGluSerAsnIle-159
 168-LeuGlyAlaLysArgVal-173
 186-LeuGluGlyAsnLysIle-191
 209-IleArgArgGlyAspIle-214
 219-ProIleArgArgGlyThrAlaGluAlaIleGlu-229
 232-AlaHisGlyAspLysLysThrSer-239
 242-IleGlyArgArgIleSer-247
 277-ValIleGlnAspGlyAsp-282
 289-SerArgArgArgIleLeuAsnGluLeuGluLys-299
a049-2

AMPHI Regions - AMPHI
 15-GlnHisLeuLeuGlu-19
 33-ThrAspAspThrValAspGlyIleGlyGlnMet-43
 50-GlnProPheGlyGln-54
 61-GluHisPheAlaProValAspGlyPheArg-70
 79-HisGlnArgPhePhe-83
 103-IleGlyValPheProAlaPhe-109
 202-ArgGlyAlaGlyGlnArgArgValSerArgHisCys-213
 217-AlaArgLeuThrGlnValPheGlnThrPhePhe-227

Antigenic Index - Jameson-Wolf
 6-PheAspTyrArgThrArgLeu-12
 20-LeuIleGlyLysAsnArgHis-26
 29-LeuHisArgArgThrAspAspThrValAspGly-39
 49-AspGlnProPheGly-53
 64-AlaProValAspGlyPheArgValGlnAsnIleAspLeuAspGlyHisGlnArgPhePhe-83
 90-PheArgAsnProValCysArgArgThrArgPheCys-101
 122-GlyIleLysProAspSerProProArgPhe-131
 135-PheArgAsnArgHisLeuGlnGlySerLeuArgVal-146
 150-PheLeuLysAspAspHisArgValGly-158
 182-GlnHisThrGlySer-186
 193-ArgHisArgArgValArgSerGlyPheArgGlyAlaGlyGlnArgArgValSerArgHisCys-213
 246-ArgGlnThrAsnProArgProLysArgGlyLeu-256

Hydrophilic Regions - Hopp-Woods
 21-IleGlyLysAsnArgHis-26
 31-ArgArgThrAspAspThrValAsp-38
 72-GlnAsnIleAspLeuAspGlyHisGlnArgPhePhe-83
 93-ProValCysArgArgThrArgPheCys-101
 124-LysProAspSerProProArg-130
 150-PheLeuLysAspAspHisArgVal-157
 193-ArgHisArgArgValArgSerGlyPheArgGlyAlaGlyGlnArgArgValSerArg-211
 246-ArgGlnThrAsnProArgProLysArgGlyLeu-256
a050-1

AMPHI Regions - AMPHI
 10-IleGlnSerIleCysAspAlaPheGlnPheIleSerTyrTyr-23
 25-ProLysAspTyrIleAspAlaLeuTyrLysAlaTrpGlnLys-38
 94-ValAsnGluGlyVal-98

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163-AsnProSerAspAsnIleValAspTrpValLeuLys-174
 177-ProThrMetGlyAla-181
 235-LeuGluLeuPheGluLysValAsnAla-243
 250-GlyLeuGlyGlyLeuThrThr-256
 275-AlaMetIleProAsn-279
 302-ArgValGluAspTrpProAspLeuThr-310
 315-AsnGlyLysArgValAspValAsp-322
 353-LysArgLeuValAspMetLeuAspLys-361
 367-ValAspPheThrAsnArgLeu-373
 379-ProValAspProValGlyAspGlu-386
 396-AlaThrArgMetAspLysPheThrArgGlnMet-406
 410-ThrAspLeuLeuGlyMet-415
 452-LysSerSerLysValLeuAlaPhe-459

Antigenic Index - Jameson-Wolf

4-IleLysGlnGluAspPheIle-10
 23-TyrHisProLysAspTyrIleAspAlaLeu-32
 36-TrpGlnLysGluGluAsnProAlaAlaLysAspAlaMet-48
 55-SerArgMetCysAlaGluAsnAsnArgProIleCysGlnAspThrGly-70
 88-MetSerValGluGluMetValAsnGluGlyValArgArgAlaTyrThrTrpGluGlyAsnThrLeuArgAlaSerVal-113
 116-AspProAlaGlyLysArgGlnAsnThrLysAspAsnThr-128
 137-ValProGlyAspLysValGluVal-144
 146-CysAlaAlaLysGlyGlyGlySerGluAsnLysSerLysLeu-159
 163-AsnProSerAspSerIle-168
 192-GlyIleGlyGlyThrProGluLysAlaValLeuMetAlaLysGluSerLeu-208
 213-AspIleGlnGluLeuGlnGluLysAlaAlaSerGlyAlaGluLeuSerThr-229
 284-ArgHisValGluPheGluLeuAspGlyProValGluLeuThrProProArgValGluAspTrpProAspLeuThrTyrSerProAspAsnGlyLysArgValAspValAspLysLeuThrLysGluGluValAlaSer-331
 345-LeuThrGlyArgAspAlaAlaHisLysArgLeuValAspMetLeuAspLysGlyGluGluLeuPro-366
 379-ProAspProValGlyAspGluIleValGlyProAlaGlyProThrThrAlaThrArgMetAspLysPheThrArgGlnMetLeuGluGlnThrAsp-411
 417-GlyLysSerGluArgGlyAlaAlaThr-425
 428-AlaIleAlaAspAsnLysAla-434
 450-AlaIleLysSerSerLys-455
 470-PheGluValLysAspMetPro-476
 481-ValAspSerLysGlyGluSerIle-488
 492-AlaProProGlnTrpGln-497

Hydrophilic Regions - Hopp-Woods

4-IleLysGlnGluAspPheIle-10
 36-TrpGlnLysGluGluAsnProAlaAlaLysAspAlaMet-48
 57-MetCysAlaGluAsnAsnArgProIleCys-66
 88-MetSerValGluGluMetValAsnGluGlyValArgArg-100
 117-ProAlaGlyLysArgGlnAsnThrLysAspAsnThr-128
 138-ProGlyAspLysValGluVal-144
 148-AlaLysGlyGlyGlySerGluAsnLysSerLysLeu-159
 195-GlyThrProGluLysAlaValLeuMetAlaLysGluSerLeu-208
 213-AspIleGlnGluLeuGlnGluLysAlaAlaSer-223
 225-AlaGluLeuSerThr-229
 284-ArgHisValGluPheGluLeuAspGly-292
 299-ThrProProArgValGluAspTrpPro-307
 313-ProAspAsnGlyLysArgValAspValAspLysLeuThrLysGluGluValAlaSer-331
 345-LeuThrGlyArgAspAlaAlaHisLysArgLeuValAspMetLeuAspLysGlyGluGluLeuPro-366
 382-ProValGlyAspGluIleVal-388

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397-ThrArgMetAspLysPheThrArgGlnMetLeuGluGlnThrAsp-411

417-GlyLysSerGluArgGlyAlaAlaThr-425

428-AlaIleAlaAspAsnLysAla-434

450-AlaIleLysSerSerLys-455

470-PheGluValLysAspMetPro-476

481-ValAspSerLysGlyGluSerIle-488

a052

AMPHI Regions - AMPHI

40-AlaLysAlaSerLysSerAlaThrSerProLysGlyLeuAspGlyValSerLys-57

66-ThrAlaAlaPheHisSerPheIleSerValGlyAspThrLeuThrSerMetProAsnLeuValThrMetLeu-89

Antigenic Index - Jameson-Wolf

4-ValAlaGluGluThrGluIle-10

14-CysPheLysGlyGluProThrGlyAspSerArgLeuLeuSerThrThrLysSerAlaPro-33

36-CysAlaAsnSerAlaLysAlaSerLysSerAlaThrSerProLysGlyLeuAspGlyValSerLysAsnSerSer-60

95-ValValProAsnArgLeuArgLeu-102

108-ProAlaCysLysLysValLysAsnAlaAla-117

Hydrophilic Regions - Hopp-Woods

4-ValAlaGluGluThrGluIle-10

15-PheLysGlyGluProThrGlyAspSerArgLeu-25

29-ThrLysSerAlaPro-33

38-AsnSerAlaLysAlaSerLysSerAlaThrSerProLysGlyLeuAspGlyValSerLysAsnSer-59

98-AsnArgLeuArgLeu-102

109-AlaCysLysLysValLysAsnAlaAla-117

a075

AMPHI Regions - AMPHI

19-LysThrProThrThrIleGlnProAlaSerIleProSer-31

65-AlaProTyrLeuArgGlnValLeu-72

80-PheLysLysCysLeuAla-85

116-AspPhePheGlnThrCysValAsnArgPhePheGluValValGluIleIleGlyIleGly-135

Antigenic Index - Jameson-Wolf

10-ThrMetGluLysThrLysSerAlaAlaLysThrProThr-22

25-GlnProAlaSerIlePro-30

52-AlaLysAlaArgGly-56

91-PhePheArgArgProProAsnIleArgLysSerValPheGlnLysSerGluTyrAspLys-110

Hydrophilic Regions - Hopp-Woods

10-ThrMetGluLysThrLysSerAlaAlaLysThr-20

52-AlaLysAlaArgGly-56

91-PhePheArgArgProProAsnIleArgLysSerValPheGlnLysSerGluTyrAspLys-110

a080

AMPHI Regions - AMPHI

6-GluAlaMetGluArgLeuThrArg-13

95-PheProAspThrValGlu-100

108-ProValAlaArgTrpGlyAspHis-115

144-SerAlaGluMetLeuArgArgTyrAspGluPheSerThrValLeu-158

195-LysArgLeuArgLeuPheThrGluAlaTrpGlnHis-206

Antigenic Index - Jameson-Wolf

1-MetTrpAspAsnAlaGluAlaMetGluArgLeuThr-12

33-AsnSerAsnHisLeuPro-38

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42-ValSerLeuLysGly-46
 50-TyrSerAspLysLysAlaLeu-56
 67-AsnIleLeuArgThrAspIleAsnGlyAlaGlnGluAlaTyrArg-81
 90-MetValArgArgArgPheProAspThrValGlu-100
 103-LeuThrGluArgLysProValAlaArgTrpGly-113
 116-AlaLeuValaspGlyGluGlyAsnValPhe-125
 127-AlaArgLeuAspArgProGlyMetPro-135
 138-ArgGlyAlaGluGlyThrSer-144
 146-GluMetLeuArgArgTyrAspGlu-153
 163-LeuGlyIleLysGlu-167
 187-ArgLeuGlyArgGluasnGluMetLysArgLeuArgLeu-199
 207-LeuLeuArgLysAsnLysAsnArgLeuSer-216
 220-MetArgTyrLysAspGlyPheSer-227
 230-TyrAlaProAspGlyLeuProGluLysGluSerGluGlu-242

Hydrophilic Regions - Hopp-Woods

3-AspAsnAlaGluAlaMetGluArgLeuThr-12
 50-TyrSerAspLysLysAlaLeu-56
 69-LeuArgThrAspIleAsnGlyAlaGlnGluAlaTyrArg-81
 90-MetValArgArgArgPheProAspThrVal-99
 103-LeuThrGluArgLysProValAlaArgTrpGly-113
 116-AlaLeuValaspGlyGluGlyAsnValPhe-125
 127-AlaArgLeuAspArgProGly-133
 138-ArgGlyAlaGluGlyThrSer-144
 146-GluMetLeuArgArgTyrAspGlu-153
 163-LeuGlyIleLysGlu-167
 187-ArgLeuGlyArgGluasnGluMetLysArgLeuArgLeu-199
 208-LeuArgLysAsnLysAsnArgLeuSer-216
 220-MetArgTyrLysAspGlyPheSer-227
 234-GlyLeuProGluLysGluSerGluGlu-242
a081

AMPHI Regions - AMPHI

22-LysProValSerArgIleValThrAspSer-31
 86-ThrAlaLeuGlnMetLeuAlaLysAlaTrpArgGluAsn-98
 116-LysGluMetLeuAlaAlaValLeuArgArg-125
 135-ThrAlaGlyAsnPhe-139
 165-MetAsnHisPheGluLeuAlaValLeuThrGlnIleAlaLys-179
 185-ValAsnAsnAlaMetArg-190
 198-AspGlyValGlyAspIleAlaLysAla-206
 303-LeuAsnAspValAlaGluGlyLeuLysGlyPheSerAsnIle-316
 345-AlaAlaValAspLeuAlaArgMetPro-354
 360-ValMetGlyAspMetGlyGluLeuGlyGlu-369
 399-ValGluAlaAlaGlu-403

Antigenic Index - Jameson-Wolf

16-ProMetProSerGluSerLysProValSer-25
 27-IleValThrAspSerArgAspIleArgAlaGlyAsp-38
 44-AlaGlyGlyArgPheAspAla-50
 67-ValSerArgGluAspCysValAla-74
 77-GlyAlaLeuLysValAspAspThrLeu-85
 94-AlaTrpArgGluAsnValAsnProPhe-102
 108-GlySerGlyGlyLysThrThrValLysGluMetLeu-119
 123-LeuArgArgArgPheGlyAspAsnAlaVal-132
 138-AsnPheAsnAsnHisIle-143
 151-LysLeuAsnGluLysHisArg-157

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178-AlaLysProAspAla-182
 194-GlyCysGlyPheAspGlyValGlyAspIleAlaLysAlaLysSerGluIle-210
 213-GlyLeuCysSerAspGly-218
 223-ProGlnGluAspAlaAsn-228
 239-LeuAsnThrArgThrPheGlyIleAspSerGlyAspValHisAla-253
 280-ValProGlyArgHisAsnVal-286
 305-AspValAlaGluGlyLeuLys-311
 313-PheSerAsnIleLysGlyArgLeuAsnValLysSerGlyIleLysGly-328
 330-ThrLeuIleAspAspThrTyrAsnAlaAsnProAspSerMetLysAlaAlaVal-347
 363-AspMetGlyGluLeuGlyGluAspGluAlaAla-373
 381-AlaTyrAlaArgAspGlnGlyIle-388
 395-GlyAspAsnSerValGluAlaGluLysPheGlyAla-407
 422-LeuArgHisAspLeuProGluArgAlaThrVal-432
 434-ValLysGlySerArg-438
 443-GluGluValValGluAlaLeuGluAspLys-452

Hydrophilic Regions - Hopp-Woods

17-MetProSerGluSerLysProValSer-25
 27-IleValThrAspSerArgAspIleArgAla-36
 46-GlyArgPheAspAla-50
 67-ValSerArgGluAspCysValAla-74
 77-GlyAlaLeuLysValAspAspThrLeu-85
 94-AlaTrpArgGluAsnVal-99
 109-SerGlyGlyLysThrThrValLysGluMetLeu-119
 123-LeuArgArgArgPheGlyAsp-129
 151-LysLeuAsnGluLysHisArg-157
 178-AlaLysProAspAla-182
 199-GlyValGlyAspIleAlaLysAlaLysSerGluIle-210
 223-ProGlnGluAspAlaAsn-228
 247-AspSerGlyAspValHisAla-253
 305-AspValAlaGluGlyLeuLys-311
 316-IleLysGlyArgLeuAsnVal-322
 335-ThrTyrAsnAlaAsnProAspSerMetLysAlaAlaVal-347
 363-AspMetGlyGluLeuGlyGluAspGluAlaAla-373
 381-AlaTyrAlaArgAspGlnGlyIle-388
 397-AsnSerValGluAlaAlaGluLysPheGlyAla-407
 422-LeuArgHisAspLeuProGluArgAlaThrVal-432
 443-GluGluValValGluAlaLeuGluAspLys-452

a084-2

AMPHI Regions - AMPHI

6-ArgIleLysAsnMetAspGlnThrLeuLysAsnThrLeuGly-19
 21-CysAlaLeuLeuAla-25
 48-AlaValGlyAlaLeuAla-53
 65-PheProArgValSer-69
 96-GlnIleValGlySerIleLeuGluSer-104
 111-GluPheValGlyAsnLeuProGly-118

Antigenic Index - Jameson-Wolf

1-MetLysGlnSerAlaArgIleLysAsnMetAspGlnThrLeuLysAsnThr-17
 40-TyrGluTyrGlyTyrArgTyrSer-47
 102-LeuGluSerAsnProAlaGluAlaArgGluPheValGly-114
 139-ValSerGlyGlyGly-143

Hydrophilic Regions - Hopp-Woods

1-MetLysGlnSerAlaArgIleLysAsnMetAspGlnThrLeu-14

105-AsnProAlaGluAlaArgGluPheVal-113

a085-2

AMPHI Regions - AMPHI

41-GluArgValSerGlnIleGlyLysMetPheAspGlyLeu-53

60-LeuLysAspAlaLeuSerAsnGlyPheAsp-69

89-ArgAsnGlyGlyArgValLeuGlyAspIleGluLeuLeuAlaAspIle-104

125-ThrSerLeuValGlyTyr-130

141-IleAlaGlyAsnIleGlyAla-147

174-GluAsnThrGluSerLeu-179

193-HisLeuAspArgTyrAspAspLeuLeuAspTyr-203

212-ArgGlyAspGlyValGln-217

225-PheCysArgAlaMetLysArgAla-232

275-HisAsnAlaThrAsnValMetAlaAlaValAlaLeuCysGluAla-289

300-HisValLysThrPheGlnGlyLeuProHisArgValGluLysIleGly-315

336-AlaAlaIleAlaGlyLeu-341

353-GlyLysGlyGlnAspPheThr-359

395-AspCysAlaThrLeuGluGluAlaValGlnLysAla-406

424-SerPheAspMetPheLysGlyTyr-431

Antigenic Index - Jameson-Wolf

4-GlnAsnLysIleLeu-9

23-TyrLeuArgLysAsnGlyAlaGluValAlaAlaTyrAspAlaGluLeuLysProGluArgValSerGlnIleGlyLysMetPheAsp-51

58-GlyArgLeuLysAspAlaLeuSerAsnGly-67

74-SerProGlyIleSerGluArgGlnProAspIleGluAlaPheLysArgAsnGlyGlyArgValLeuGly-96

104-IleValAsnArgArgGlyAspLysValIle-113

116-ThrGlySerAsnGlyIleThrThr-123

150-LeuGluAlaLeuGluGlnArgGluGlyLysAlaAsp-162

169-SerSerPheGlnIleLeuGluAsnThrGluSerLeuArgProThrAla-183

189-IleSerGluAspHisLeuAspArgTyrAspAspLeuLeu-201

204-AlaHisThrLysAlaLysIlePheArgGlyAspGlyVal-216

220-AsnAlaAspAspAlaPheCysArgAlaMetLysArgAlaGlyArgGluValLys-237

247-PheTrpLeuGluArgGluThrGlyArgLeuLysGlnGlyAsnGluAspLeuIleAla-265

291-GlyLeuProArgGluAlaLeu-297

307-LeuProHisArgValGluLysIleGlyGluLysAsnGly-319

322-PheIleAspAspSerLysGlyThrAsnVal-331

351-GlyMetGlyLysGlyGlnAspPheThrProLeuArgAspAlaLeuAlaGlyLysAlaLys-370

378-AspAlaProGlnIleArgArgAspLeuAspGlyCysAspLeuAsnMetThrAspCysAlaThrLeuGluGluAlaValGln-404

431-TyrAlaHisArgSer-435

Hydrophilic Regions - Hopp-Woods

4-GlnAsnLysIleLeu-9

25-ArgLysAsnGlyAlaGlu-30

32-AlaAlaTyrAspAlaGluLeuLysProGluArgValSerGln-45

59-ArgLeuLysAspAlaLeu-64

76-GlyIleSerGluArgGlnProAspIleGluAlaPheLysArgAsnGlyGly-92

104-IleValAsnArgArgGlyAspLysValIle-113

118-SerAsnGlyLysThrThr-123

150-LeuGluAlaLeuGluGlnArgGluGlyLysLysAlaAsp-162

174-GluAsnThrGluSerLeuArgPro-181

189-IleSerGluAspHisLeuAspArgTyrAspAspLeuLeu-201

204-AlaHisThrLysAlaLysIlePheArgGlyAspGly-215

220-AsnAlaAspAspAlaPheCysArgAlaMetLysArgAlaGlyArgGluValLys-237

247-PheTrpLeuGluArgGluThrGlyArgLeuLysGlnGlyAsnGluAspLeuIleAla-265

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291-GlyLeuProArgGluAlaLeu-297
 309-HisArgValGluLysIleGlyGluLysAsnGly-319
 324-AspAspSerLysGlyThrAsn-330
 353-GlyLysGlyGlnAsp-357
 359-ThrProLeuArgAspAlaLeuAlaGlyLysAlaLys-370
 380-ProGlnIleArgArgAspLeuAspGlyCysAsp-390
 397-AlaThrLeuGluGluAlaValGln-404
 431-TyrAlaHisArgSer-435

a086**AMPHI Regions - AMPHI**

55-MetArgThrTrpArgArgLeuValPro-63
 83-IleAsnGlyAlaThrArg-88
 99-ProThrGluLeuPheLysLeuAlaVal-107
 120-GluValLeuArgSerMetGluSerLeuGlyTrpGlnSerIleTrpArgGlyThrAlaAsn-139
 155-GluMetTyrGlyArgPhe-160
 185-SerPheValValIle-189
 228-ArgValGlnArgValValAlaPheLeuAspProTrpLysAspProGln-243
 293-GlyPheGlyMetCys-298
 336-TrpIleGlyIleGlnSerPhe-342

Antigenic Index - Jameson-Wolf

20-LeuAlaSerLysGluGlyGlyAsp-27
 55-MetArgThrTrpArgArg-60
 79-AlaGlyArgGluIleAsnGlyAlaThr-87
 115-PheThrArgArgGluGluValLeuArgSerMetGlu-126
 134-TrpArgGlyThrAla-138
 144-AlaThrAsnProGlnAlaArgArgGluThrLeuGluMet-156
 225-AlaProTyrArgVal-229
 236-LeuAspProTrpLysAspProGlnGlyAla-245
 265-GlyLeuGlyAlaSerLeuSerLysArgGlyPheLeu-276
 313-SerIleGlyLysGlnSerArgAspLeuGly-322
 352-LeuProThrLysGlyLeu-357
 382-IleAspTyrGluAsnArgArgLysMetArgGlyTyrArgValGlu-396

Hydrophilic Regions - Hopp-Woods

21-AlaSerLysGluGlyGlyAsp-27
 79-AlaGlyArgGluIleAsnGly-85
 115-PheThrArgArgGluGluValLeuArgSerMetGlu-126
 147-ProGlnAlaArgArgGluThrLeuGluMet-156
 238-ProTrpLysAspProGlnGly-244
 270-LeuSerLysArgGlyPheLeu-276
 316-LysGlnSerArgAspLeu-321
 382-IleAspTyrGluAsnArgArgLysMetArgGlyTyrArgValGlu-396

a087**AMPHI Regions - AMPHI**

23-ValAlaAspSerLeuArg-28
 80-GlnThrValArgGluAlaGlnGlnIle-88
 99-GlyPheGlyGlyPheValThrPheProGlyGlyLeuAlaAlaLysLeuLeu-115
 129-GlyLeuSerAsnArgHisLeuSerArgTrpAlaLysArgValLeuTyrAlaPheProLys-148
 157-ValGlyAsnProValArg-162
 192-GlyAlaAspValLeuAsnLysThrVal-200
 239-GluCysValGluPheIleThrAspMetValSerAlaTyr-251
 313-GluLysLeuAlaGluIleLeuGly-320
 330-TrpAlaGluAsnAla-334

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Antigenic Index - Jameson-Wolf

25-AspSerLeuArgAlaArgGly-31
 37-LeuGlySerAspSerMetGluGluArgIleValPro-49
 61-LysGlyValArgGlyAsnGlyIleLysArgLysLeu-72
 81-ThrValArgGluAlaGlnGlnIleIleArgLysHisArgVal-94
 130-LeuSerAsnArgHisLeuSerArgTrpAlaLys-140
 150-PheSerHisGluGlyGlyLeu-156
 159-AsnProValArgAlaAspIleSer-166
 171-ProAlaGluArgPheGlnGlyArgGluGlyArgLeu-182
 195-ValLeuAsnLysThrVal-200
 207-LeuProAspAsnAlaArgProGlnMetTyrHisGlnSerGlyArgGlyLysLeuGly-225
 229-AlaAspTyrAspAla-233
 249-SerAlaTyrArgAspAlaAsp-255
 284-AlaValAspAspHisGlnThrAla-291
 309-GlnLeuThrAlaGluLysLeuAlaGlu-317
 321-GlyLeuAsnArgGluLysCysLeuLys-329
 331-AlaGluAsnAlaArgThr-336
 341-HisSerAlaAspAspValAlaGlu-348

Hydrophilic Regions - Hopp-Woods

25-AspSerLeuArgAlaArgGly-31
 39-SerLysAspSerMetGluGluArgIleValPro-49
 66-AsnGlyIleLysArgLysLeu-72
 81-ThrValArgGluAlaGlnGlnIleIleArgLysHisArgVal-94
 134-HisLeuSerArgTrpAlaLys-140
 161-ValArgAlaAspIle-165
 171-ProAlaGluArgPheGlnGlyArgGluGlyArgLeu-182
 219-SerGlyArgGlyLysLeu-224
 249-SerAlaTyrArgAspAlaAsp-255
 284-AlaValAspAspHisGlnThrAla-291
 310-LeuThrAlaGluLysLeuAlaGlu-317
 322-LeuAsnArgGluLysCysLeuLys-329
 331-AlaGluAsnAlaArg-335
 341-HisSerAlaAspAspValAlaGlu-348
a088-2

AMPHI Regions - AMPHI

7-HisPheSerAsnTrpLeuThrGlyLeuAsnIlePheGlnTyrThrThr-22
 24-ArgAlaValMetAlaAlaLeu-30
 43-ThrIleArgArgLeuThrAlaLeuLysCysGlyGln-54
 68-LeuTrpGlyAsnTrpAlaAsn-94
 111-GlyPheTyrAspAspTrpArgLysValValTyr-121
 140-AlaIleIleAlaGlyLeuAlaLeu-147
 175-GlyPheLeuValLeuSerTyrLeuThrIle-184
 187-ThrSerAsnAlaValAsnLeuThrAspGlyLeuAspGlyLeuAlaThr-202
 221-HisSerGlnPheAlaGlnTyrLeuGlnLeuProTyr-232
 245-AlaMetCysGlyAlaCysLeuGlyPhe-253

Antigenic Index - Jameson-Wolf

48-ThrAlaLeuLysCysGlyGlnAlaValArgThrAspGlyProGln-62
 66-ValLysAsnGlyThrProThrMet-73
 114-AspAspTrpArgLysValValTyrLysAspProAsnGlyValSerAlaLysPhe-131
 193-LeuThrAspGlyLeuAsp-198
 312-LysLysThrLysLysArgIle-318
 328-TyrGluGlnLysGlyTrpLysGluThrGlnVal-338

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Hydrophilic Regions - Hopp-Woods

56-ValArgThrAspGlyProGln-62
 114-AspAspTrpArgLysValValTyrLysAspProAsnGlyVal-127
 312-LysLysThrLysLysArgIle-318
 331-LysGlyTrpLysGlu-335

a089**AMPHI Regions - AMPHI**

44-CysGlyArgProXxxLysVal-50
 73-ThrLeuValAlaLeuCysLysProCysSerGlyIle-84
 118-SerArgProAlaArgPhe-123

Antigenic Index - Jameson-Wolf

1-MetProProLysIleThrLysSerGlyPhe-10
 40-PheSerThrArgCysGlyArgProXxxLys-49
 54-SerSerAsnAlaSerArgGlyLysProThrAlaSerHisLysAla-68
 80-ProCysSerGlyIle-84
 95-CysPheArgArgProValSerArgSerAsnGlnLysSerAlaSerTyrSerAsnGluAsnHisPheThrSerA
 rgProAlaArgPheIleAlaArgGlnAsnAlaSerAlaSerAlaPheLysThrCysThrProSerProArgLysIleE
 u-144

Hydrophilic Regions - Hopp-Woods

43-ArgCysGlyArgProXxxLys-49
 56-AsnAlaSerArgGlyLysProThrAlaSerHisLysAla-68
 95-CysPheArgArgProValSerArgSerAsnGlnLysSerAlaSerTyrSerAsn-112
 119-ArgProAlaArgPheIleAla-125
 137-ThrProSerProArgLysIle-143

a090-1**AMPHI Regions - AMPHI**

10-SerGlnSerLeuLysArgProAspLysHisPheArg-21
 142-AspPhePheHisAlaValArgGlnAlaLeuLysGlyPheAspValPheGluGlnCysPheAla-162

164-GlnThrAspGlyPhe-168

177-ValSerGlyValValGlnAlaLeuGlnArg-186

226-LeuHisArgThrThrGluArgIleValArgIleGlnAsnLeuHisThrVal-242

253-ValValGluGlnVal-257

268-ValGlnHisCysArgArgSerArg-275

381-GlyAlaGluCysGlnAsnIleGluThrValGlyGluArg-393

404-ProValLysHisLeuThrAspLeuArg-412

425-AsnLeuArgAlaValPheAlaGlnValGlyAsnHisGlyAsnThrArgAlaAlaLysSer-444

Antigenic Index - Jameson-Wolf

9-ValSerGlnSerLeuLysArgProAspLysHisPheArg-21
 29-HisIleGluThrArgAlaGlyGlyAlaGluGlnHisAspIleAla-43
 56-PheGlnSerGlyAla-60
 73-AlaAspLeuArgArgIleAspThrAspGlnGluHis-84
 89-AlaGlyLysArgValAlaGlnGlyArgGluVal-99
 107-XxxAsnHisGluGluArgIleLeuGlnThrGlyAsnArgGlyGlyArgThrAspValArg-127
 149-GlnAlaLeuLysGlyPheAsp-155
 161-PheAlaArgGlnThrAspGlyPheAlaGlnGlyAsnGlySerHisHisValSer-178
 187-AsnIleLeuArgGlyAsnGln-193
 215-GlnArgLysProPheHisLeuAla-222
 228-ArgThrThrGluArgIleValArg-235
 269-GlnHisCysArgArgSerArgAlaGln-277
 285-GluThrGlyLysLeuGlnHis-291

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305-LeuGlnAsnArgArgAlaAspIleLeaArgAspAsnGlyIle-318

320-ProThrLeuAspAlaGluIleLeaAspGlnAlaArgTyrArgGly-334

339-AlaGlyAsnArgAsnHis-344

353-ValArgGlnGlnPhe-357

369-LysGlyLeuAspIle-373

380-AlaGlyAlaGluCysGlnAsn-386

398-AlaArgValLysHisGlnProVal-405

407-HisLeuThrAspLeuArgHis-413

421-IleIleArgSerAsnLeuArg-427

434-GlyAsnHisGlyAsnThrArgAlaAlaLysSerGlyAspGluAspPhePhe-450

Hydrophilic Regions - Hopp-Woods

11-GlnSerLeuLysArgProAspLysHisPheArg-21

29-HisIleGluThrArgAlaGlyGlyAlaGluGlnHisAspIleAla-43

73-AlaAspLeuArgArgIleAspThrAspGlnGluHis-84

89-AlaGlyLysArgValAlaGlnGlyArgGluVal-99

107-XxxAsnHisGluGluArgIleLeu-114

117-GlyAsnArgGlyGlyArgThrAspValArg-127

228-ArgThrThrGluArgIleValArg-235

269-GlnHisCysArgArgSerArgAla-276

285-GluThrGlyLysLeuGln-290

305-LeuGlnAsnArgArgAlaAspIleLeaArgAspAsnGlyIle-318

322-LeuAspIleGluIleLeaAspGlnAlaArgTyrArg-333

369-LysGlyLeuAspIle-373

380-AlaGlyAlaGluCysGlnAsn-386

398-AlaArgValLysHisGlnPro-404

409-ThrAspLeuArgHis-413

421-IleIleArgSerAsnLeu-426

437-GlyAsnThrArgAlaAlaLysSerGlyAspGluAspPhePhe-450

a091

AMPHI Regions - AMPHI

39-ProLeuSerAspGlyIleAlaSerCys-47

49-IleThrArgPheGlnAlaLeuVal-56

61-ValLeuValSerValLeuThrSerLeuAlaLys-71

Antigenic Index - Jameson-Wolf

5-ValProProSerProAlaThr-11

38-LysProLeuSerAspGlyIleAla-45

a092

AMPHI Regions - AMPHI

55-GlyMetSerGlyIleAlaGluValLeuHis-64

76-AlaArgAsnAlaAlaThrGluHisLeu-84

95-HisThrAlaGluHisValAsnGly-102

120-ValAlaAlaLeuGlu-124

137-AlaGluLeuMetArgPheArgAsp-144

209-LeuThrProIleMetSerValValThrAsnIleAsp-220

226-ThrTyrGlyHisSerValGluLysLeuHisGlnAlaPheIleAspPheIleHisArg-244

259-HisValArgAlaIleLeuProLysValSerLysProTyr-271

273-ThrTyrGlyLeuAspAspAspThrAla-280

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321-AsnValLeuAsnAlaLeuAlaAlaIle-329
 339-ValGluAlaIleGlnLysGly-345
 353-GlyArgArgPheGlnLysTyrGlyAspIleLys-363
 407-ArgTyrThrArgThrArgAspLeuPheGluAspPheThrLysValLeuAsnThrValAspAlaLeu-428
 449-LeuAlaArgAlaIleArgValLeuGlyLysLeu-459
 464-CysGluAsnValAlaAspLeuProGluMetLeuLeuAsn-476

Antigenic Index - Jameson-Wolf

14-LeuTrpArgAlaAsnGlyGlnProPheLys-23
 25-ThrProLeuArgIleGluAsnProProGluArgAsnIleMetMetLysAsnArgVal-43
 70-ValSerGlySerAspGlnAlaArgAsnAlaAla-80
 111-AlaValLysLysGluAsnProGluVal-119
 140-MetArgPheArgAspGlyIle-146
 150-GlyThrHisGlyLysThrThrThr-157
 184-GlyThrAsnAlaArgLeuGlyLysGlyGluTyr-194
 198-GluAlaAspGluSerAspAla-204
 218-AsnIleAspGluAspHisMetAspThrTyrGly-228
 230-SerValGluLysLeuHis-235
 255-IleAspSerGluHisVal-260
 263-IleLeuProLysValSerLysProTyrAla-272
 275-GlyLeuAspAspThrAlaAsp-281
 286-AspIleGluAsnValGlyAla-292
 302-MetLysGlyHisGluGlnGlySerPhe-310
 351-GlyValGlyArgArgPheGlnLysTyrGlyAspIleLysLeuProAsnGlyGly-368
 374-AspAspTyrGlyHisHisPro-380
 393-AlaTyrProGluLysArgLeu-399
 404-GlnProHisArgTyrThrArgThrArgAspLeuPheGluAspPheThrLys-420
 435-AlaAlaGluGluProIleAlaAlaAlaAspSerArgAlaLeuAlaArg-451
 466-AsnValAlaAspLeuPro-471
 478-LeuGlnAspGlyAspIle-483
 488-GlyAlaGlySerIleAsn-493

Hydrophilic Regions - Hopp-Woods

26-ProLeuArgIleGluAsnProGluArgAsnIleMetMetLysAsnArgVal-43
 71-SerGlySerAspGlnAlaArgAsnAlaAla-80
 111-AlaValLysLysGluAsnProGlu-118
 140-MetArgPheArgAsp-144
 152-HisGlyLysThrThr-156
 187-AlaArgLeuGlyLysGlyGlu-193
 198-GluAlaAspGluSerAspAla-204
 218-AsnIleAspGluAspHisMetAsp-225
 230-SerValGluLysLeuHis-235
 256-AspSerGluHisVal-260
 275-GlyLeuAspAspThrAlaAsp-281
 303-LysGlyHisGluGlnGlySer-309
 351-GlyValGlyArgArgPheGlnLys-358
 360-GlyAspIleLysLeu-364
 393-AlaTyrProGluLysArgLeu-399
 407-ArgTyrThrArgThrArgAspLeuPheGluAspPheThrLys-420
 435-AlaAlaGlyGluGluProIleAlaAlaAlaAspSerArgAlaLeuAlaArg-451
 466-AsnValAlaAspLeuPro-471
 479-GlnAspGlyAspIle-483
a093-2

AMPHI Regions - AMPHI

26-ThrAlaIleLeuAsn-30

59-ThrAlaPheAsnIleLeuHisGly-66
 159-LysSerValTyrGluGluLeuLysHisPhe-168
 196-IleHisIleIleProAlaThrGluPhe-204
 254-PheLeuLysAspThr-258
 267-IleAsnThrLeuProGlyMetThrGly-275

Antigenic Index - Jameson-Wolf

12-GlyGlyPheSerSerGluArgGluIleSerLeuAspSerGlyThr-26
 32-LeuLysSerLysGlyIleAsp-38
 41-AlaPheAspProLysGluThrProLeuSerGluLeuLysAlaGlnGly-56
 66-GlyThrTyrGluAspGlyAlaVal-74
 96-GlyMetAspLysTyrAspPheAspAlaValGluGluLysLeuGly-133
 120-HisAspAspThrAspPheAspAlaValGluGluLysLeuGly-133
 140-ProAlaAlaGluGlySerSer-146
 151-LysValLysGlyLysGlyArgLeuLysSerValTyrGluGluLeuLysHisPheGln-169
 176-ArgPheIleGlyGlyGluTyrSer-184
 189-AsnGlyLysGlyLeuPro-194
 203-GluPheTyrAspTyrGluAlaLysTyrAsnArgAsnAspThr-216
 218-TyrGlnCysProSerGluAspLeuThrGluAlaGluSerLeuMetArg-234
 245-GlyAlaGluGlyCysVal-250
 253-AspPheLeuLysAspThrAspGly-260
 269-ThrLeuProGlyMetThr-274

Hydrophilic Regions - Hopp-Woods

15-SerSerGluArgGluIleSerLeu-22
 32-LeuLysSerLysGlyIleAsp-38
 41-AlaPheAspProLysGluThrProLeuSerGluLeuLysAla-54
 68-TyrGlyGluAspGlyAlaVal-74
 96-GlyMetAspLysTyrArgCys-102
 120-HisAspAspThrAspPheAspAlaValGluGluLysLeuGly-133
 140-ProAlaAlaGluGlySerSer-146
 151-LysValLysGlyLysGlyArgLeuLysSerValTyrGluGluLeuLysHisPheGln-169
 205-TyrAspTyrGluAlaLysTyrAsnArgAsnAspThr-216
 221-ProSerGluAspLeuThrGluAlaGluGluSerLeuMetArg-234
 253-AspPheLeuLysAspThrAspGly-260

a094

AMPHI Regions - AMPHI

17-LeuProProIleThrLysValGlySer-25
 80-PheSerPheLeuThrAlaVal-86

Antigenic Index - Jameson-Wolf

3-SerProLeuProLysArgAlaLeu-10
 24-GlySerSerProAlaAlaProArgMetGluAla-34
 50-MetProSerArgLysArgIleAsnSerAlaAsnIleArgAlaArgGlyIleThr-67

Hydrophilic Regions - Hopp-Woods

5-LeuProLysArgAlaLeu-10
 28-AlaAlaProArgMetGluAla-34
 51-ProSerArgLysArgIleAsn-57
 60-AsnIleArgAlaArgGly-65

a095-2

AMPHI Regions - AMPHI

9-CysAlaSerAsnLeuPheArgGlnPheGlnGlnArgGlyGlyAspAlaValAsp-26
 38-ValLeuGlnAsnValGlnGlnHisPheGlyGlnIleGlyAsnValPheAlaVal-55
 86-PheGlyGlnHisGlnArgValAsnGlyIleGluAspPheGlyLysValPheLysGlnIleAlaArg-107

132-GlyArgArgHisPheAspGlyValValSer-141
 174-PheLeuAspArgPheAsnArgCysAlaAspPheGlnArgHisAlaAspGlyCysGlnCysValGlnHisVal-197
 204-GlnHisAspPheLys-208
 236-AspValGlyGlyIleValGlnThrValSerSerIle-247
 274-ThrValAspGluIleAspLysArgLeuMetGlnLeuLeuAsnThrVal-289
 313-GlyCysIleArgLeuValGly-319
 370-AsnGlyAspAlaValThrGluAlaHisGlnLeuArgGlnHisGlnGlyAla-386
 417-ValAsnValPheCysGly-422
 435-MetLeuGlySerGlyIleSerArgLeuIleArgThrGly-447
 451-ThrGlnIleValGlnAspPheGlyAspThrAlaHisAla-463

Antigenic Index - Jameson-Wolf

6-SerGlyGlyCysAlaSerAsnLeu-13
 17-PheGlnGlnArgGlyGlyAspAlaValAspAlaSerArgThrHisIle-32
 62-GlnHisAlaAspGlyAlaGlyLysSerAlaGlyIleSerGlyGlyAsnArgLeuPhe-80
 88-GlnHisGlnArgValAsnGlyIleGluAspPheGlyLys-100
 112ValArgLeuGluGlyGluTyr-118
 126-AlaAlaCysGlyGlyLysGlyArgArgHisPheAspGly-138
 144-ValHisGlnGluArgGlySerThr-151
 163-AlaAlaAspThrPheLysAlaGluGlnAlaPhe-174
 176-AspArgPheAsnArgCysAlaAspPheGlnArgHisAlaAspGlyCysGln-192
 205-HisAspPheLysArg-209
 253-GlyGlnAsnArgAlaAspVal-259
 263-AsnThrGlnLysGlyPheAlaVal-270
 273-HisThrValAspGluIleAspLysArgLeu-282
 300-IleGlyAsnAspGlyHisAsnArgCysGlnValGlnLysGlyCys-314
 339-PheAlaAlaAspAsnGluSerArgValLysSerCysArgAlaGluAspGlyGlyGlnAlaGlyGlyArg
 GlyPheAlaValArgAlaGlyAsnGlyAspAlaValThr-375
 378-HisGlnLeuArgGlnHisGlnGlyAlaArgAsnAsnGlyAsn-391
 394-LeuGlnArgSerAspAsnPheGly-401
 405-PheAspGlyGlyArgGlyAsnAspAspIleArgThr-416
 442-ArgLeuIleArgThrGlyAsnPheLysThr-451
 455-GlnAspPheGlyAspThrAlaHisAlaAspAlaAlaAspThrAspLysMetAspVal-473

Hydrophilic Regions - Hopp-Woods

17-PheGlnGlnArgGlyGlyAspAlaValAspAlaSerArgThrHisIle-32
 64-AlaAspGlyAlaGlyLysSerAlaGly-72
 93-AsnGlyIleGluAspPheGlyLys-100
 112-ValArgLeuGluGlyGluTyr-118
 128-CysGlyGlyLysGlyArgArgHisPhe-136
 145-HisGlnGluArgGlySer-150
 163-AlaAlaAlaAspThrPheLysAlaGluGlnAlaPhe-174
 182-AlaAspPheGlnArgHisAlaAspGly-190
 205-HisAspPheLysArg-209
 273-HisThrValAspGluIleAspLysArgLeu-282
 300-IleGlyAsnAspGlyHisAsnArgCysGlnVal-310
 339-PheAlaAlaAspAsnGluSerArgValLysSerCysArgAlaGluAspGlyGly-357
 368-AlaGlyAsnGlyAspAlaValThr-375
 378-HisGlnLeuArgGlnHisGlnGlyAlaArgAsnAsnGly-390
 395-GlnArgSerAspAsn-399
 407-GlyGlyArgGlyAsnAspAspIleArgThr-416
 461-AlaHisAlaAspAlaAlaAspThrAspLysMetAspVal-473
 a096-2

AMPHI Regions - AMPHI

19-GlyIlePheGluGluIleAspAlaHis-27
 37-AlaAlaAsnArgGln-41
 61-GlyValValAlaVal-65
 112-GlnPhePheValAsnAlaPheGln-119
 129-AlaTyrAlaAlaAlaPheGlyArg-136
 172-AsnGlnPheAlaAla-176
 187-AspThrAlaAlaGlyIleGlyAsnAlaGln-196
 228-GlnTrpGlyPheLeu-232

Antigenic Index - Jameson-Wolf

4-HisThrGlyGlnGly-8
 22-GluGluIleAspAla-26
 30-PheArgThrAspCysLeuArgAlaAlaAsn-39
 73-LysLeuGlyArgGlyAspAspValTyrAla-82
 97-AlaAlaAspLysProPheGlyAsnAspPhe-106
 137-ArgPheHisLysHisArgGln-143
 157-VaIGlnAspGlyGluLeuGlyAsnGlnSerGlnCysLeu-170
 181-AlaAspGlyCysGlyAspThr-188
 211-ThrValLysAspValGluCysArgLeu-219

Hydrophilic Regions - Hopp-Woods

22-GluGluIleAspAla-26
 33-AspCysLeuArgAlaAlaAsn-39
 74-LeuGlyArgGlyAspAspValTyr-81
 97-AlaAlaAspLysProPheGly-103
 137-ArgPheHisLysHisArgGln-143
 158-GlnAspGlyGluLeuGlyAsn-164
 183-GlyGlyCysGlyAspThr-188
 211-ThrValLysAspValGluCysArgLeu-219
a097

AMPHI Regions - AMPHI

28-AlaGlyLeuThrThrPheLeuThrMetCysTyrIleVal-40
 72-MetGlyPheValGly-76
 166-AlaThrLeuValGlyAspIleHisGlnProSerAlaLeuLeuAlaLeuPheGly-185
 207-ThrIleThrValIleAlaSerLeuMetGlyLeuAsnGluPheHisGlyIleIleGluValProSerIle-
 230
 242-LeuPheThrValSer-246
 260-PheAspSerThrGlyThr-265
 342-LeuAlaLysSerValProAlaPheAlaThr-351
 362-MetLeuArgSerAlaArgAspIle-369

Antigenic Index - Jameson-Wolf

1-MetAspThrSerLysGlnThrLeu-8
 13-PheLysLeuLysAlaAsnGlyThrThrValArgThrGluLeu-26
 125-LysValArgGluMetLeu-130
 260-PheAspSerThrGly-264
 277-ValAspGlyLysLeuProArgLeuLysArg-286
 317-SerAlaGlyGlyArgThrGly-323
 364-ArgSerAlaArgAspIleAspTrpAspAspMetThrGlu-376
 410-LeuCysArgArgThrLysAspValProPro-419

Hydrophilic Regions - Hopp-Woods

1-MetAspThrSerLys-5
 16-LysAlaAsnGlyThrThrValArgThrGluLeu-26
 125-LysValArgGluMetLeu-130

279-GlyLysLeuProArgLeuLysArg-286
 318-AlaGlyGlyArgThr-322
 364-ArgSerAlaArgAspIleAspTrpAspAspMetThrGlu-376
 410-LeuCysArgArgThrLysAspValPro-418
a098-2
AMPHI Regions - AMPHI
 28-alaaAlaGluAlaGlyGluGlnPheValGlyAsp-38
 110-ValGlyAspPhePheLysLeuAlaPhe-118
 120-CysGlnIleGlnAsnValValThrAlaIleAlaGlnIleValAla-134
 163-LeuSerSerPheSerHisGly-169

Antigenic Index - Jameson-Wolf
 24-ValGlnGluAspAlaAlaGluAlaGlyGlu-33
 58-MetGlyMetCysArg-72
 78-PheAsnHisThrAspArgGlnAlaAla-86
 136-ThrAlaAsnGlyThrGlnSerGlyIleThrGlyArgAsnAlaArgLysAsnGlyPhe-155
 158-PheGluGlyArgGlyLeuSerSerPheSerHisGlyIle-170
 180-ValPheArgArgProMetArgIleCys-188

Hydrophilic Regions - Hopp-Woods
 24-ValGlnGluAspAlaAlaGluAlaGlyGlu-33
 79-AsnHisThrAspArgGlnAla-85
 144-IleThrGlyArgAsnAlaArgLysArgAsnGly-154
 158-PheGluGlyArgGly-162
 180-ValPheArgArgProMetArg-186
a099
AMPHI Regions - AMPHI
 6-SerMetMetArgLeuProAspIle-13
 47-AlaPheValGluPhePheGlyGluGly-55
 102-LysLeuValGluThrTyrAlaLysThr-110
 114-TrpAlaAspAlaLeuLysThrAla-121
 135-ThrArgAsnMetAlaGlyProSerAsn-143
 154-AlaGlyLysGlyLeuAlaLysProTyrGluGluProSerAspGlyGln-169
 178-AlaAlaIleThrSerCysThrAsnThrSerAsnProArgAsnVal-192
 251-ThrCysAsnGlyMetSer-256
 341-IleAspAlaIleValAlaGluTyr-348
 350-LysProGlnGlnPheArgAspVal-357
 371-ProSerProLeuTyrAspTrpArg-378
 381-SerThrTyrIleArg-385
 400-LeuSerGlyMethArgProLeu-406
 443-AspPheAsnSerTyrAlaThr-449
 468-PheAsnGluMetValArg-473
 494-MetArgMetTrpGluAlaIleGluThrTyrMet-504
 532-ArgLeuAlaGlyVal-536
 539-IleValAlaGluGlyPheGluArgIleHisArgThrAsn-551
 575-GlyThrGluThrTyr-579

Antigenic Index - Jameson-Wolf
 18-LeuAsnGlyLysArgLysAlaGly-25
 38-PheLeuArgLysGluArgValVal-45
 53-GlyGluGlyAlaArgSer-58
 60-SerIleGlyAspArgAlaThr-66
 70-MetThrProGluPhe-74
 83-IleAspGluGlnThr-87
 94-ThrGlyArgAspAspAlaGlnValLysLeu-103

133-SerValThrArgAsnMetAlaGlyProSerAsnProHis-145
 153-LeuAlaGlyLysGlyLeuAlaLysProTyrGluGluProSerAspGlyGlnMetProAspGlyAla-174
 183-CysThrAsnThrSerAsnProArgAsnVal-192
 206-GlyLeuGlnArgLysProTrpValLysSerSerPheAlaProGlySerLysValAla-224
 227-TyrLeuLysGluAlaAspLeuLeuProGluMetGluLysLeu-240
 251-ThrCysAsnGlyMetSerGlyAlaLeuAspProLysIleGlnLysGluIleIleAspArgAspLeuTyr-273
 279-SerGlyAsnArgAsnPheAspGlyArgLeuHisProTyrAlaLys-293
 312-IleArgPheAspIleGluAsnAspVal-320
 322-GlyValAlaAspGlyLysGluIleArgLeuLysAspIleTrpProThrAspGluGluIleAsp-342
 348-TyrValLysProGlnGlnPheArgAsp-356
 363-AspThrGlyThrAlaGlnLysAlaProSerProLeuTyrAspTrpArgProMetSerThrTyrIleArgArg
 ProProTyrTrp-390
 394-LeuAlaGlyGluArgThrLeuSerGlyMetArg-404
 409-LeuProAspAsnIleThrAspHisLeuSerProSerAsn-422
 438-GlyLeuProGluGluAspPheAsnSerTyrAlaThrHisArgGlyAspHisLeuThr-456
 463-AlaAsnProLysIlePhe-468
 471-MetValArgAsnGluAspGlySerValArgGlnGlySerLeuAlaArgValGluProGluGlyGlnThr-493
 503-TyrMetAsnArgLysGlnPro-509
 516-AlaAspTyrGlyGlnGlySerArgAspTrpAlaAlaLysGlyValArg-532
 543-GlyPheGluArgIleHisArgThrAsnLeu-552
 562-PheLysProGlyThrAsnArgHisThrLeuGlnLeuAspGlyThrGluThrTyrAspValValGlyGluArg
 ThrProArgCysAspLeu-591
 595-IleHisArgLysAsnGlyGluThrValGlu-604
 609-CysArgLeuAspThrAlaGluGlu-616

Hydrophilic Regions - Hopp-Woods

18-LeuAsnGlyLysArgLysAlaGly-25
 38-PheLeuArgLysGluArgValVal-45
 53-GlyGluGlyAlaArg-57
 60-SerIleGlyAspArgAlaThr-66
 83-IleAspGluGlnThr-87
 94-ThrGlyArgAspAspAlaGlnValLysLeu-103
 157-GlyLeuAlaLysProTyrGluGluProSerAspGlyGlnMetPro-171
 227-TyrLeuLysGluAlaAspLeuLeuProGluMetGluLysLeu-240
 259-LeuAspProLysIleGlnLysGluIleIleAspArgAspLeuTyr-273
 282-ArgAsnPheAspGlyArgIle-288
 312-IleArgPheAspIleGluAsnAspVal-320
 324-AlaAspGlyLysGluIleArgLeuLysAsp-333
 335-TrpProThrAspGluGluIleAsp-342
 366-ThrAlaGlnLysIlePro-371
 394-LeuAlaGlyGluArgThrLeuSer-401
 438-GlyLeuProGluGluAspPheAsn-445
 450-HisArgGlyAspHisLeuThr-456
 471-MetValArgAsnGluAspGlySerValArgGln-481
 485-AlaArgValGluProGluGlyGlnThr-493
 503-TyrMetAsnArgLysGlnPro-509
 518-TyrGlyGlnGlySerSerArgAspTrpAlaAlaLysGlyValArg-532
 543-GlyPheGluArgIleHisArg-549
 564-ProGlyThrAsnArgHis-569
 574-AspGlyThrGluThr-578
 580-AspValValGlyGluArgThrProArgCysAsp-590
 595-IleHisArgLysAsnGlyGluThrValGlu-604
 609-CysArgLeuAspThrAlaGluGlu-616

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AMPHI Regions - AMPHI

42-ValLeuLeuTyrThrTrpPheSerMetLeu-51
 67-GlyAlaXxxPheAspThrMetValLysAspLeuLeuGlyArgSerTrpAsnIleIleAsnGlyIleAla-89
 109-ThrAlaLysGlyLeuGlySerAlaAla-117
 128-LeuValPhePheGlyIleLeuAlaPheCys-137
 144-LeuValAspArgPheThrSerValLeu-152
 155-GlyMetValLeuThr-159
 207-AsnValSerSerLeuLeuLysTyrPheLys-216
 221-LysValAlaLysSerIle-226
 267-IleGluThrLeuSerLysPheAlaGlnThrGlyAsnMetAspLysIleLeuSerLeuPheSerTyrMetAla-290
 303-PheAspTyrIleAlaAspIlePheLysTrpAsnAsp-314
 341-PheValThrAlaIleGlyTyr-347
 352-AlaThrValTrpThrGlyIleIlePro-360
 374-GlyLysThrTyrLysVal-379

Antigenic Index - Jameson-Wolf

1-MetProThrLysThrProSerLeu-8
 77-LeuLeuGlyArgSer-81
 107-AspLeuThrAlaLysGlyLeuGlySerAlaAlaGlyGly-119
 143-ArgLeuValAspArgPheThr-149
 179-ThrGlnAlaProThrGlyThrAsn-186
 214-TyrPheLysGlyAspAlaProLysValAla-223
 246-XxxAsnLeuProArgAsnGluPhe-253
 274-AlaGlnThrGlyAsnMetAspLysIle-282
 311-LysTrpAsnAspSerValSerGlyArgThrLysThr-322
 364-LeuTyrArgSerArgLysLysPheGlyAlaGlyLysThrTyrLysVal-379

Hydrophilic Regions - Hopp-Woods

1-MetProThrLysThr-5
 143-ArgLeuValAspArgPheThr-149
 215-PheLysGlyAspAlaProLysValAla-223
 248-LeuProArgAsnGluPhe-253
 277-GlyAsnMetAspLys-281
 316-ValSerGlyArgThrLysThr-322
 366-ArgSerArgLysLysPheGlyAla-373

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AMPHI Regions - AMPHI

11-TrpIleGlyLeuGly-15
 22-ValThrArgLeuLeuAsp-27
 51-LysValTyrGlyAsnThrAlaGluLeu-59
 74-AlaAlaValCysAspIleLeuAsnGlyValArgAspGlyLeu-87
 97-ThrIleSerProThr-101
 110-ValGluAlaAlaGlyGlnPheAlaGluAlaProVal-122
 143-AlaValLeuAsnProLeuGlnLysIlePheSer-153
 162-PheGlyAspValGlyLysGlySer-169
 176-AsnSerLeuLeuGlyIlePheGlyGluAlaTyr-186
 203-IleValGluAlaIleGlyGlySerAla-211
 249-LeuGluGlnAlaGlyAsnThrLeuProAlaValGlu-260
 263-AlaalaSerTyrArgLysAlaValGluAla-272

Antigenic Index - Jameson-Wolf

2-SerAlaAsnGluTyrThr-7
 25-LeuLeuAspGlyIleGlu-31

34-ValTyrAsnArgSerProAspLysThrAlaProIleSerAlaLysGlyAlaLysValTyrGlyAsnThr-56
 81-AsnGlyValArgAspGlyLeuAla-88
 96-SerThrIleSerProThrGluAsnLeuAla-105
 121-ProValSerGlySerValGlyProAlaThr-130
 139-GlyGlySerGluAla-143
 155-VaIGlyLysLysThrPheHisPheGlyAspValGlyLysGlySerGly-170
 196-PheGlyIleAspThrAspThrIleVal-204
 210-SerAlaMetAspSerProMetPheGlnThrLysSerLeuTrpAlaAsnArgGluPheProPro-231
 237-HisAlaSerLysAspLeuAsnLeuAlaValLysGluLeuGluGlnAlaGlyAsnThrLeuPro-257
 264-AlaSerTyrArgLysAlaValGluAlaGlyTyrGlyGluGlnAspValSerGly-281

Hydrophilic Regions - Hopp-Woods

25-LeuLeuAspGlyGlyIle-30
 37-ArgSerProAspLysThrAlaProIleSerAlaLysGlyAlaLys-51
 81-AsnGlyValArgAspGlyLeuAla-88
 164-AspValGlyLysGlySerGly-170
 196-PheGlyIleAspThrAspThrIle-203
 218-GlnThrLysLysSerLeuTrpAla-225
 237-HisAlaSerLysAspLeuAsnLeuAlaValLysGluLeuGluGlnAlaGly-253
 265-SerTyrArgLysAlaValGlu-271
 273-GlyTyrGlyGluGlnAspVal-279

a109-2**AMPHI Regions - AMPHI**

6-GlyThrTyrArgAspLeuHisArgProAlaSerGlu-17
 53-LeuIleProAlaMetAlaGlyThrIleGly-62
 69-AlaValAlaAlaAlaPhe-74
 145-GlyLeuLeuMetAla-149
 156-IleMetAlaLysLeuThrSer-162
 177-GlyThrThrGlyGlnValLysLysLeuPheSerTrpAlaGly-190
 207-ValMetTyrAlaLeuLeuGluHistTrpLysLysArgTrpLeu-220
 222-ValProLeuGlyCys-226
 294-HisGlnValPheGlnLysIle-300
 326-ValGlySerIleLeuGly-331
 336-ThrSerSerTrpGlyThr-341
 471-AlaValGlyMetLeuProGlyIleProProPheLeuGluHisPheLysSerLeu-488

Antigenic Index - Jameson-Wolf

1-MetGluLysHisAsnGlyThrTyrArgAspLeuHisArgProAlaSer-16
 18-PheAlaThrArgAspGluTyrLeuGlu-26
 32-MetGlnProLysArgTrpArgProAsnLeuProPheArgAspTyrArgPheGluTrp-50
 78-LeuGlyLeuProAsp-82
 109-ProGlyIleAsnLeuProGlyThrHis-117
 160-LeuThrSerAsnGlyVal-165
 179-ThrGlyGlnValLysLys-184
 245-AlaProGlyLeuProPro-250
 259-GluAsnSerGlyTrp-263
 301-SerTyrProGluLysThrAspLysVal-309
 312-AsnIleAspAspThrMetThr-318
 348-IleAlaLysArgProIleProGlyGly-356
 398-AlaGlyMetGluMetThrArgLysGlyLysThrThrGlnSer-411
 441-GlyCysLysGluArgSerAla-447

Hydrophilic Regions - Hopp-Woods

1-MetGluLysHisAsnGlyThrTyrArgAspLeuHisArgProAlaSer-16
 18-PheAlaThrArgAspGluTyrLeuGlu-26

35-LysArgTrpArgPro-39
 44-ArgAspTyrArgPheGluTrp-50
 180-GlyGlnValLysLys-184
 301-SerTyrProGluLysThrAspLysVal-309
 313-IleAspAspThrMetThr-318
 348-IleAlaLysArgProIlePro-354
 398-AlaGlyMetGluMetThrArgLysGlyLysThrThrGln-410
 441-GlyCysLysGluArgSerAla-447
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AMPHI Regions - AMPHI

6-ArgLeuProAsnPheIleArgThrLeu-14
 58-ProSerProAlaGluIleGlnLysArgIleAspAspAlaLeuLysGluValAsnArgGlnMetSer-79
 90-PheAsnGlnHisThrAlaGly-96
 128-GlyProLeuValAsnLeuTrp-134
 151-IleLysGlnAlaAlaSerTyrThrGly-159
 170-AspTyrAlaSerLeu-174
 183-LeuAspLeuSerSerIleAlaLys-190
 209-TyrLeuValGluIleGlyGly-215
 314-GluThrGluAlaLeu-318

Antigenic Index - Jameson-Wolf

1-MetProSerGluThrArgLeuProAsnPhe-10
 26-CysSerGluGlnThrAla-31
 37-GlnGlyGluThrMetGly-42
 49-TyrLeuSerAsnAsnArgAspLysLeuProSerProAlaGluIleGlnLysArgIleAspAspAlaLeuLysGluValAsnArgGlnMetSerThrTyrGlnProAspSerGluIleSerArgGlnHisThrAlaGlyLysProCLeuArgIleSerSerAspPhe-105
 135-GlyPheGlyProAspLysSerValThrArgGluProSerProGluGlnIleLysGln-153
 163-IleIleLeuLysGlnGlyLysAspTyrAlaSerLeuSerLysThrHisProLysAla-181
 192-PheGlyValAspLysValAlaGlyGluLeuGluLysTyrGly-205
 213-IleGlyGluLeuHisGlyLysGlyLysAsnAlaArgGlyGluProTrpArgIleGlyIleGluGlnProAsnIle-238
 250-LeuAsnAsnArgSerLeuAlaThrSerGlyAspTyrArg-262
 264-PheHisValAspLysSerGlyLysArgLeuSer-274
 277-IleAsnProAsnAsnLysArgProIleSer-286
 299-AlaMetThrAlaAspGlyLeuSer-306
 314-GluThrGluAlaLeuLysLeuAlaGluArgGluLysLeu-326
 332-ValArgAspLysGlyGlyTyrArg-339
 342-MetSerSerGluPheGluLysLeuLeuArg-351

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluThrArgLeu-7
 26-CysSerGluGlnThrAla-31
 51-SerAsnAsnArgAspLysLeuProSer-59
 61-AlaGluIleGlnLysArgIleAspAspAlaLeuLysGluValAsnArgGln-77
 82-GlnProAspSerGluIleSerArg-89
 97-LysProLeuArgIleSerSer-103
 137-GlyProAspLysSerValThrArgGluProSerProGluGlnIleLysGln-153
 163-IleIleLeuLysGlnGlyLysAspTyrAlaSer-173
 175-SerLysThrHisPro-179
 192-PheGlyValAspLysValAlaGlyGluLeuGluLysTyrGly-205
 217-LeuHisGlyLysGlyLysAsnAlaArgGlyGluProTrp-229
 265-HisValAspLysSerGlyLysArgLeuSer-274
 279-ProAsnAsnLysArgProIle-285
 314-GluThrGluAlaLeuLysLeuAlaGluArgGluLysLeu-326

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332-ValArgAspLysGlyGlyTyr-338
 344-SerGluPheGluLysLeuLeuArg-351
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AMPHI Regions - AMPHI
 6-ProIleGlnAspThrGlnSerAla-13
 15-LeuGlnGluLeuArgGluTrpPheAspSerTyrCysThr-27
 57-GlyGluProLeuProAspHis-63
 72-HisGluLeuAspLeuLeu-77
 79-AspAlaValAlaAlaThrLeuLeuAlaAspIleGlyArgTyr-92
 104-CysAsnSerThrValAlaGluLeuLeuValLysGlyValAspGluValGlnLysLeuThrHisPheAlaArgVal
 AspSerLeu-130
 145-LysMetLeuLeuAlaMet-150
 170-PheLeuSerAsnAlaProAspSerProGluLys-180
 216-GluProGluLysTyrArg-221
 234-ArgLeuGluTyrIleGluAsnPheLeuAsnIleLeuArg-246
 260-GlyArgProLysHisIleTyrSerIleTyrLys-270
 282-LeuPheAspIleArg-286
 290-IleLeuValAspThrValProGluCysTyrThrThrLeuGlyIleValHisSerLeuTrpGlnProIlePro
 GlyGluPheAspSerTyrIleAla-321
 327-GlyTyrLysSerLeuHisThr-333
 351-AspMetHisGlnPheAsnGluPheGlyValAla-361
 385-GlnLeuLeuAspTyr-389
 440-HisSerSerIleGlyAspArg-446
 493-LysAlaIleGlyIleArgAlaTyr-501
 504-GlnGlnAsnAlaAsp-508
 521-GlnLeuAlaLysLeu-525
 532-GlnGluLeuAlaGlu-536
 539-GlyTyrLysLysProGluAspLeuTyrThr-548
 557-AsnArgAlaIleGlnLysAlaCysGlyThrLeuAsnGluProPro-571
 585-LysIleLysLysGlyGly-590
 603-MetThrThrLeuAlaLysCysCysLysProAla-613
 616-AspAspIleValGly-620
 637-SerPheArgHisLeuAlaGluHisAlaProGluLysValLeuAspAla-652
 679-ArgAspValSerAspAla-684
 714-GlnValThrAspLeuProArgValLeuAlaSerLeuGlyAspValLysGlyValLeuSerValThrArg-73
 6

Antigenic Index - Jameson-Wolf

5-SerProIleGlnAspThrGlnSerAlaThr-14
 16-GlnGluLeuArgGluTrpPheAspSerTyrCysThrAlaLeuProAsnAsnAspLysLysLeu-36
 52-AlaAlaThrProTyrGlyGluProLeuProAspHisPhe-64
 88-AspIleGlyArgTyrValProAspTyr-96
 100-ValSerGluArgCysAsnSerThrVal-108
 110-GluLeuValLysGlyValAspGluValGlnLys-120
 125-AlaArgValAspSerLeuAlaThrProGluGluArgAlaGlnGlnAlaGluThrMetArg-144
 162-AlaMetArgThrArgThr-167
 173-AsnAlaProAspSerProGluLysArgAlaValAlaLysGluThrLeu-188
 209-AspLeuGlyPheArgHisGlnGluProGluLysTyrArgGlu-222
 227-LeuAspGluLysArgThrGluArgLeuGluTyr-237
 245-LeuArgThrGluLeuLysLys-251
 258-ValAlaGlyArgProLysHis-264
 271-LysMetValLysLysLysLeuSerPhe-279
 294-ThrValProGluCysTyr-299
 311-ProIleProGlyGluPheAspAspTyrIleAlaAsnProLysGlyAsnGlyTyrLysSer-330
 335-IleValGlyProGluAspLysGlyValGluValGlnIleArgThr-349

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364-TrpArgTyrLysGluGlyGlyLysGlyAspSerAlaTyrGluGlnLys-379
 387-LeuAspTrpArgGluAsnMetAlaGluSerGlyLysGluAspLeuAlaAla-403
 418-ThrProHisGlyLys-422
 440-HisSerSerIleGlyAspArgCysArgGlyAlaLysValGluGly-454
 461-ThrProLeuGluAsnGlyGlnArgValGluIleIleThrAlaLysGluGlyHisProSerValAsn-482
 487-GlyIrpVallysSerAsnLysAlaIleGlyLys-497
 502-IleArgGlnGlnAsnAlaAspThrValArgGluGluGlyArgValGlnLeuAspLysGlnLeuAla-523
 525-LeuThrProLysProAsnLeuGlnGluLeuAla-536
 538-LeuGlyTyrLysLysProGluAspLeu-546
 551-GlyGlnGlyGluIleSerAsnArgAlaIleGlnLysAlaCysGlyThrLeuAsnGluProProValPro-574
 582-LysGlnSerLysIleLysLysGlyGlyLysAsnGlyVal-594
 596-IleAspGlyGluAspGlyLeu-602
 608-LysCysCysLysProAlaProAspAspIleVal-619
 622-ValThrArgAspArgGlyIleSerValHisArgLysThrCysProSerPhe-638
 644-HisAlaProGluLysValLeuAsp-651
 667-IleGluIleArgAlaGlnAspArgSerGlyLeuLeuArgAspValSerAspAlaLeuAlaArgHisLysLeu-690
 696-GlnThrGlnSerArgAspLeuGluAlaSerMet-706
 710-LeuGluVallysGlnValThrAspLeuProArg-720
 726-GlyAspValLysGly-730

Hydrophilic Regions - Hopp-Woods

8-GlnAspThrGlnSer-12
 16-GlnGluLeuArgGluTrpPhe-22
 30-ProAsnAsnAspLysLysLeu-36
 100-ValSerGluArgCysAsnSerThr-107
 110-GluIeuVallysGlyValAspGluValGlnLys-120
 125-AlaArgValAspSer-129
 131-AlaThrProGluGluArgAlaGlnGlnAlaGluThrMetArg-144
 162-AlaMetArgThrArgThr-167
 174-AlaProAspSerProGluLysArgAlaValAlaLysGluThrLeu-188
 209-AspLeuGlyPheArgHisGlnGluProGluLysTyrArgGlu-222
 227-LeuAspGluLysArgThrGluArgLeuGluTyr-237
 245-LeuArgThrGluLeuLysLys-251
 258-ValAlaGlyArgProLysHis-264
 271-LysMetVallysLysLysLeuSerPhe-279
 314-GlyGluPheAspAsp-318
 323-ProLysGlyAsnGly-327
 337-GlyProGluAspLysGlyValGluValGlnIleArgThr-349
 365-ArgTyrLysGluGlyGlyLysGlyAspSerAlaTyrGluGln-378
 387-LeuAspTrpArgGluAsnMetAlaGluSerGlyLysGluAspLeuAlaAla-403
 443-IleGlyAspArgCysArgGlyAlaLysValGluGly-454
 463-LeuGluAsnGlyGlnArgValGluIleIleThrAlaLysGluGlyHisPro-479
 489-VallysSerAsnLysAlaIleGlyLys-497
 505-GlnAsnAlaAspThrValArgGluGluGlyArgValGlnLeuAspLysGlnLeuAla-523
 538-LeuGlyTyrLysProGluAspLeu-546
 553-GlyGluIleSerAsn-557
 582-LysGlnSerLysIleLysLysGlyGlyLys-591
 596-IleAspGlyGluAspGlyLeu-602
 608-LysCysCysLysProAlaProProAspAspIle-618
 622-ValThrArgAspArgGlyIleSerValHisArgLysThrCysPro-636
 644-HisAlaProGluLysValLeu-650
 667-IleGluIleArgAlaGlnAspArgSerGlyLeuLeuArgAspValSerAspAlaLeuAlaArgHisLysLeu-690

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697-ThrGlnSerArgAspLeuGluAlaSerMet-706
 710-LeuGluValLysGlnValThrAspLeuProArg-720
 726-GlyAspValLysGly-730

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AMPHI Regions - AMPHI
 24-GlyLysTrpTyrAsp-28
 57-IleProArgAspIle-61
 65-IleGlyThrIleLeuAspPheLeuMetValProAsn-76
 94-IleHisGluArgTyrGluArgPheThrThrMetLeuArg-106

Antigenic Index - Jameson-Wolf

2-CysGluPheLysAspPheArgArgAsnIleProCys-13
 15-GluGluTyrAspGluAsnSerPhe-22
 24-GlyLysTrpTyrAspAspGlyValTrpAspAspGluGluTyrTrpLysLeuGluAsnAspLeuIleGluValA
 rgLysLysTyrProTyrProMetAspIleProArgAspIle-61
 86-ProTrpLeuProAspSer-91
 93-GlyIleHisGluArgTyrGluArg-100
 109-PheThrGluLysAspIleVal-115
 119-PheAspTyrTyrAsnLysLys-125

Hydrophilic Regions - Hopp-Woods

2-CysGluPheLysAspPheArgArgAsnIleProCys-13
 15-GluGluTyrAspGlu-19
 30-GlyValTrpAspAspGluGluTyrTrpLysLeuGluAsnAspLeuIleGluValArgLysLysTyrProTyr-
 53
 96-GluArgTyrGluArg-100
 109-PheThrGluLysAspIleVal-115
 121-TyrTyrAsnLysLys-125

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AMPHI Regions - AMPHI
 6-LysAsnIlePheSerAla-11
 49-SerGlyAsnAlaTyrLysIleValSerThrIleLys-60
 77-AsnThrLeuHisProThrTyrTyrArgAspIleArgArg-89
 142-IleThrAsnGlyLysLysLeuTyrSerValGlyGlyLeuAsnLysAlaGly-158
 189-ProSerLeuAsnAsnIleProAla-196

Antigenic Index - Jameson-Wolf

35-SerGlySerTyrGly-39
 45-ThrPheGluArgSerGlyAsnAlaTyrLys-54
 68-PheGluSerGlyGlyThrValVal-75
 85-ArgAspIleArgArgGlyLysLeuTyrAlaGlu-95
 97-LysPheAlaAspGlySerValThrTyrGlyLysAlaGlyGluSerLysThrGluGlnSerProLysAla-119
 131-AlaAsnAspAlaLysLeuProProGlyLeuLysIleThrAsnGlyLysLysLeuTyrSer-150
 153-GlyLeuAsnLysAlaGlyThrGlyLysTyrSerIleGlyGlyValGluThrGluValValLysTyrArgVal
 ArgArgGlyAspAspAlaVal-183
 199-GlyTyrThrAspAspGlyLysThrTyr-207
 218-GlyGlnAlaAlaLysPro-223

Hydrophilic Regions - Hopp-Woods

45-ThrPheGluArgSerGlyAsn-51
 85-ArgAspIleArgArgGlyLysLeuTyrAla-94
 107-LysAlaGlyGluSerLysThrGluGlnSerProLysAla-119
 131-AlaAsnAspAlaLysLeu-136
 143-ThrAsnGlyLysLysLeuTyr-149
 155-AsnLysAlaGlyThrGly-160

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167-ValGluThrGluValValLysTyrArgValArgArgGlyAspAspAla-182

200-TyrThrAspAspGlyLysThrTyr-207

219-GlnAlaAlaLysPro-223

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AMPHI Regions - AMPHI

68-GlnGluLeuSerArgLeuTyrAlaGlnThr-77

101-ThrValArgHisAlaPro-106

148-ProAlaPheHisGlu-152

165-LeuAsnIleGlyGlyIlealaAsnIle-173

189-ProGlyAsnMetLeuMetAspAlaTrpMetGlnAla-200

216-GlyAsnIleLeuProGlnLeuLeuAspArgLeuLeu-227

237-ProLysSerThrGly-241

251-GluThrTyrLeuAsp-255

262-AspValLeuArgThrLeuSerArgPheThrAlaGlnThrValPheAspAlaValSerHis-281

303-AlaAspLeuAlaGluCysPhe-309

341-ValAsnArgIleProGlySerPro-348

Antigenic Index - Jameson-Wolf

13-ThrSerMetAspGlyAlaAsp-19

23-IleArgMetAspGlyGlyLysTrpLeuGly-32

40-ProTyrProGlyArgLeuArgArgLysLeuLeuAspLeuGlnAspThrGlyAlaAspGluLeuHisArgSerArgMetLeuSer-67

86-AsnLeuAlaProSerAspIleThrAla-94

97-CysHisGlyGlnThrValArgHisAlaProGluHisSerTyrSer-111

119-LeuLeuAlaGluArgThrGln-125

129-ValGlyAspPheArgSerArgAspLeuAlaAlaGlyGlyGlnGly-143

154-LeuPheArgAspAspArgGluThrArgAla-163

177-ProProAspAlaPro-181

184-GlyPheAspThrGlyProGlyAsn-191

205-ProTyrAspLysAsnGlyAlaLysAlaAlaGlnGlyAsn-217

235-ProHisProLysSerThrGlyArgGlu-243

253-TyrLeuAspGlyGlyGluAsnArgTyrAspValLeuArgThrLeuSer-268

283-AlaAlaAspAlaArgGln-288

293-GlyGlyGlyIleArgAsnProValLeu-301

344-IleProGlySerProHisLysAlaThrGlyAlaSerLysProCysIle-359

Hydrophilic Regions - Hopp-Woods

13-ThrSerMetAspGlyAlaAsp-19

43-GlyArgLeuArgArgLysLeuLeuAspLeuGlnAspThrGlyAlaAspGluLeuHisArgSerArgMetLeuSer-67

101-ThrValArgHisAlaPro-106

119-LeuLeuAlaGluArgThrGln-125

131-AspPheArgSerArgAspLeuAlaAla-139

154-LeuPheArgAspAspArgGluThrArgAla-163

206-TyrAspLysAsnGlyAlaLysAlaAlaGln-215

236-HisProLysSerThrGlyArgGlu-243

254-LeuAspGlyGlyGluAsnArgTyrAspVal-263

283-AlaAlaAspAlaArgGln-288

344-IleProGlySerProHisLysAlaThrGlyAlaSer-355

a122-1

AMPHI Regions - AMPHI

6-AsnIleHisLysThrPhe-11

42-ThrPheLeuArgCysLeuAsnAlaLeuGluMetProGlu-54

102-LeuGluAsnValMetGlu-107

126-LysLeuLeuGluLys-130

176-ProGluLeuValGlnAspValLeuAsnAlaMetLysGluLeuAlaArgGluGly-193
 227-ProLysGluLeuPheAspHisPro-234

Antigenic Index - Jameson-Wolf
 5-ArgAsnIleHisLysThrPheGlyLysAsnThrIle-16
 23-AspValCysLysGlyGln-28
 34-GlyProSerGlySerGlyLysThrThr-42
 51-GluMetProGluAspGlyGlnIleGluPheAspAsnGluArgProLeuLysIleAspPheSerLysLysProS
 erLysHisAspIle-79
 81-AlaLeuArgArgLysSerGlyMet-88
 96-PheProHisLysThrAlaLeu-102
 114-GlyLysProAlaAlaGlnAlaArgGluGluAlaLeuLysLeuLeuGlu-129
 131-ValGlyLeuGlyAspLysValAspLeu-139
 145-SerGlyGlyGlnGlnArgValGlyIle-154
 168-AspGluProThrSerAlaLeuAspProGluLeuVal-179
 184-AsnAlaMetLysGluLeuAlaArgGluGlyTrp-194
 222-ValGluGlnGlySerProLysGluLeuPheAspHisProLysHisGluArgThrArgArgPheLeuSer-24
 4

Hydrophilic Regions - Hopp-Woods
 51-GluMetProGluAspGlyGlnIleGluPheAspAsnGluArgProLeuLysIleAspPheSerLysLysProS
 erLysHisAsp-78
 81-AlaLeuArgArgLysSerGly-87
 114-GlyLysProAlaAlaGlnAlaArgGluGluAlaLeuLysLeuLeuGlu-129
 131-ValGlyLeuGlyAspLysValAsp-138
 168-AspGluProThrSerAlaLeuAspProGluLeuVal-179
 184-AsnAlaMetLysGluLeuAlaArg-191
 224-GlnGlySerProLysGluLeuPheAspHisProLysHisGluArgThrArgArgPheLeu-243
 a126-1
AMPHI Regions - AMPHI
 26-LeuLysGlnSerValArg-31
 73-GlyCysGlnSerValGlnGluAla-80
 112-PheGlnLeuValGluAla-117
 143-LeuAspAlaGlyCysGln-148
 150-LeuMetProTrpAlaAlaProIleGlyThrGlyLeuGlyAlaVal-164
 213-SerGlyAspProValAsnMetAlaArgAlaPhe-223

Antigenic Index - Jameson-Wolf
 7-GluThrPheProSerArgLeu-13
 24-GluIleLeuLysGlnSerValArgThrAlaArg-34
 41-SerLeuArgArgAlaGlyCysGlyGlyGluAlaHisGlyGlnGlyPhe-56
 85-GlnMetAlaArgGluValPheGlu-92
 99-GluLeuIleGlyAspAspAspThrLeuGln-108
 121-LeuIleLysAspGlyPheLysValLeu-129
 141-ArgLeuLeuAspAlaGlyCys-147
 171-ValLeuArgGluArgLeuProAspThrProLeu-181
 209-AlaValSerArgSerGlyAspProValAsn-218
 228-GluSerGlyArgLeuAlaPhe-234
 237-GlyProValGluAlaArgAspLysAlaGlnAlaSerThrProThrVal-252

Hydrophilic Regions - Hopp-Woods
 24-GluIleLeuLysGlnSerValArgThrAlaArg-34
 41-SerLeuArgArgAlaGlyCysGlyGlyGluAlaHis-52
 85-GlnMetAlaArgGluValPheGlu-92
 100-LeuIleGlyAspAspAspThrLeuGln-108

171-VailLeuArgGluArgLeuProAsp-178
 210-ValSerArgSerGlyAspPro-216
 228-GluSerGlyArgLeuAlaPhe-234
 237-GlyProValGluAlaArgAspLysAlaGinAla-247

a127

AMPHI Regions - AMPHI
 6-MetLeuAspThrTrpLeuGlyAla-13
 22-GluSerValAlaVal-26
 119-VaIGlyAspTyrIleGluIle-125
 135-IleAsnLeuLeuAsnThrLeuMet-142
 147-ProAsnProLeuValGlyGlnLeuAla-155
 206-LeuGluProLeuCysAlaPro-212
 214-IleProAlaIleGlnArgHisLeuGluAsnValGln-225
 250-ArgIleIleValArgPheAlaSerProVal-259
 268-AlaValMetAspGluPheLeuArgVal-276

Antigenic Index - Jameson-Wolf

16-IleArgAlaGluAlaValGlu-22
 41-HisPheLysArgHisProAspPheGlyIleGluSerLysArgArgPheLeuVal-58
 112-SerAlaThrGlnGlnTyrSerVal-119
 126-AsnGlyLeuArgGlyArgValValAsp-134
 169-HisProValArgArgAspAsnIleLeu-177
 193-LeuAspSerAspGluAlaValCysArg-201
 233-ProAlaAlaLysProArgValThrArgValProTyrAspAspLysAlaTyr-249
 257-SerProValSerLysArgLeuGluIle-265
 283-TyrProAlaGlySerGluThrLeu-290

Hydrophilic Regions - Hopp-Woods

16-IleArgAlaGluAlaValGlu-22
 42-PheLysArgHisProAspPheGlyIleGluSerLysArgArgPheLeuVal-58
 126-AsnGlyLeuArgGlyArgValVal-133
 170-ProValArgArgAspAsnIleLeu-177
 193-LeuAspSerAspGluAlaValCysArg-201
 235-AlaLysProArgValThrArgValProTyrAspAspLysAlaTyr-249
 259-ValSerLysArgLeuGluIle-265
 285-AlaGlySerGluThrLeu-290

a128-1

AMPHI Regions - AMPHI

43-AlaGlnThrHisThrGlyTrpAlaAsnThrValGluProLeuThrGlyIleThrGluArgValGlyArgIleTerpGlyValValSerHisLeuAsnSerValIleThrAspThrProGlu-81
 85-AlaTyrAsnGluLeuMetProGluIle-93
 102-GlnAspIleGluLeuTyrAsnArgPheLysThrIleLysAsnSerProGluPheAsp-120
 166-PheSerGlnAsnValLeuAspAlaThrAsp-175
 189-GlyIleProGluAspAla-194
 2118-HisTyrLeuAlaVal-222
 231-LeuArgGluGlnIleTyr-236
 245-GluLeuSerAspAspGlyLysPheAspAsnThrAlaAsnIleAspArgThrLeuGluAsnAlaLeu-266
 269-AlaLysLeuGlyPheLysAsnTyrAlaGlu-279
 286-MetAlaAspThrProGluGlnValLeuAsnPheLeuHisAspLeuAlaArgArgAla-304
 313-AlaGluVallysAlaPhe-318
 359-GlyLysValLeuAsnGlyLeuPheAlaGlnIleLysLysLeuTyrGly-374
 425-GlyArgArgPhe-429
 472-LeuIleHisLeuLeuThrGlnValAspGluLeu-482
 496-GluLeuProSerGlnPhe-501
 565-GlyArgLeuLysAsnTrpGlnGlnValLeuAspSerVal-577

584-ValArgProProGluTyrAsnArgPheAlaAsnSerPheGlyHisIlePheAlaGlyGly-603
 610-SerTyrAlaTrpAlaGlu-615
 623-AlaAlaPheGluGluSerAspAsp-630
 636-LysArgPheTrpGlnGluIleLeuAla-644
 651-AlaAlaGluSerPheLysAlaPheArg-659

Antigenic Index - Jameson-Wolf

9-LeuGlyGluGluProArgPheAspGlnIleLysThrGluAspIleLysProAlaLeu-27
 32-AlaGluAlaArgGluGlnIleAla-39
 43-AlaGlnThrHisThrGlyTrp-49
 51-AsnThrValGluProLeuThr-57
 59-IleThrGluArgValGlyArgIleTrp-67
 75-SerValThrAspThrProGluLeuArgAlaAlaTyr-86
 100-IleGlyGlnAspIleGluLeuTyrAsnArgPheLysThrIleLysAsnSerProGluPheAspThr-121
 123-SerHisAlaGlnLysThrLeuAsnHisAspLeuArgAsp-136
 140-SerGlyAlaGluLeuProProGluGlnGlnAlaGluLeuAlaLysLeuGlnThrGluGlyAlaGlnLeu-162
 2
 165-LysPheSerGlnAsnVal-170
 172-AspAlaThrAspAla-176
 190-IleProGluAspAla-194
 202-AlaGlnSerGluGlyLysThrGlyTyrLys-211
 226-AlaAspAsnArgLysLeuArgGluGlnIle-235
 240-ValThrArgAlaSerGluLeuSerAspAspGlyLysPheAspAsnThrAlaAsnIleAspArgThrLeuGlu-263
 285-LysMetAlaAspThrProGluGln-292
 300-LeuAlaArgArgAlaLysProTyrAlaGluLysAspLeuAlaGlu-314
 316-LysAlaPheAlaArgGluSerLeuGly-324
 335-TyrAlaGlyGluLysLeuArgGluAlaLysTyrAlaPheSerGluThrGluValLysLys-354
 376-GlyPheThrGluLysThrVal-382
 387-LysAspValArgTyrPheGluLeuGlnGlnAsnGlyGluThrIle-401
 409-TyrAlaArgGluGlyLysArgGlyGlyAla-418
 420-MetAsnAspTyrLysGlyArgArgPheSerAspGlyThrLeu-434
 446-ThrProProValGlyGlyLysGluAlaArgLeuSerHisAspGlu-460
 478-GlnValAspGluLeuGlyVal-484
 496-GluLeuProSerGln-500
 516-SerAlaHisGluGluThrGlyVal-523
 560-SerGluAspAspGluGlyArgLeuLysAsn-569
 575-AspSerValArgLysGluValAlaValValArgProProGluTyrAsnArgPhe-592
 605-SerAlaGlyTyrTyrSerTyr-611
 625-PheGluGluSerAspValAlaIleThrGlyLysArgPheTrp-639
 646-GlyGlySerArgSerAlaAlaGluSerPheGlyArgGluProSerIle-665
 669-LeuArgHisSerGlyPheAspAsnAlaAla-678

Hydrophilic Regions - Hopp-Woods

9-LeuGlyGluGluProArgPheAspGlnIleLysThrGluAspIleLysPro-25
 32-AlaGluAlaArgGluGlnIleAla-39
 59-IleThrGluArgValGly-64
 77-ThrAspThrProGluLeuArgAlaAlaTyr-86
 100-IleGlyGlnAspIleGluLeu-106
 111-LysThrIleLysAsnSerProGluPheAspThr-121
 123-SerHisAlaGlnLysThrLeuAsnHisAspLeuArgAsp-136
 143-GluLeuProProGluGlnGlnAlaGluLeuAlaLysLeuGlnThrGluGlyAlaGlnLeu-162
 190-IleProGluAspAla-194
 202-AlaGlnSerGluGlyLysThrGlyTyr-210
 226-AlaAspAsnArgLysLeuArgGluGlnIle-235

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242-ArgAlaSerGluLeuSerAspAspGlyLysPheAspAsn-254
 256-AlaAsnIleAspArgThrLeuGlu-263
 285-LysMetAlaAspThrProGlu-291
 300-LeuAlaArgArgAlaLysProTyrAlaGluLysAspLeuAlaGlu-314
 316-LysalaPheAlaLysLeuArgGluAlaLysTyrAlaPheSerGluThrGluValLysLys-354
 377-PheThrGluLysThr-381
 387-LysAspValArgTyr-391
 396-GlnAsnGlyGluThr-400
 409-TyrAlaArgGluGlyLysArgGlyGly-417
 423-TyrLysGlyArgArgPheSerAsp-431
 449-ValGlyLysGluAlaArgLeuSerHisAspGlu-460
 478-GlnValAspGluLeuGly-483
 516-SerAlaHisGluGluThrGly-522
 560-SerGluAspAspGluGlyArgLeuLysAsn-569
 575-AspSerValArgLysGluValAlaVal-583
 585-ArgProProGluTyrAsnArg-591
 625-PheGluGluSerAspAspValAlaAlaThrGly-635
 647-GlySerArgSerAlaAlaGluSerPheLysAlaPheArgGlyArgGluProSerIle-665
a130
AMPHI Regions - AMPHI
 16-ThrLeuValSerGlyIle-21
 36-GlySerGlySerPheGly-41
 56-GlnProValGlyGlnLeu-61
 91-AsnValProAsnAlaPro-96
 110-GlnGlyPheAspThrLeuPheGlnHisAlaLeuAsnGlyPheAsnAlaMet-126
 171-ThrAlaSerAlaPro-175
 204-PheGluAlaThrCysGln-209
 211-CysHisGlyGlySerIleProGlyIlePro-220
 234-LysGlyLysGluThr-238
 245-GluGlyPheAsnAlaMet-250

Antigenic Index - Jameson-Wolf
 1-MetLysGlnLeuArgAspAsnLysAlaGlnGlySer-12
 35-AlaGlySerGlySerPheGlyAspValAspAlaThrThrGluAlaAlaThrGlnThrArgIleGlnProValG
 ly-59
 63-MetGlyAspGlyIleProValGlyGluArgGlnGlyGlu-75
 87-AlaAlaAspSerAsnValProAsnAlaProLysLeuGluHisAsnGlyAspTrpAla-105
 108-IleAlaGlnGlyPhe-112
 126-MetProAlaLysGlyGlyAla-132
 134-AspLeuThrAspGlnGluLeuLysArg-142
 148-AlaAsnLysSerGlyGlySerPheProAsnProAspGluAlaAlaProAlaAspAsnAlaAlaSerGlyThr
 AlaSerAlaProAlaAspSerAlaAlaProAlaGluAlaLysAlaGluAspLysGlyAlaAla-192
 197-GlyValAspGlyLysLysValPheGlu-205
 221-GlyIleGlyLysLysAspAspTrpAlaProArgIleIleLysLysGlyGluThrLeuHis-240
 251-ProAlaLysGlyGlyAsnAlaGlyLeuSerAspAspGluValLysAla-266
 274-GlnSerGlyAlaLys-278

Hydrophilic Regions - Hopp-Woods
 1-MetLysGlnLeuArgAspAsnLysAlaGlnGly-11
 41-GlyAspValAspAlaThrThrGluAlaAlaThr-51
 68-ProValGlyGluArgGlnGlyGlu-75
 87-AlaAlaAspSerAsnVal-92
 96-ProLysLeuGluHisAsnGly-102
 127-ProAlaLysGlyGlyAla-132

134-AspLeuThrAspGlnGluLeuLysArg-142
 156-ProAsnProAspGluAlaAlaProAlaAsnAlaAla-168
 174-AlaProAlaAspSerAlaAlaProAlaGluAlaLysAlaGluAspLysGlyAlaAla-192
 198-ValAspGlyLysLysValPheGlu-205
 222-IleGlyLysAspAspTrpAlaProArgIleLysLysGlyLysGluThrLeuHis-240
 251-ProAlaLysClyGlyAsn-256
 258-GlyLeuSerAspAspGluValLysAla-266
a132-2

AMPHI Regions - AMPHI

13-IleIleSerAlaLeuAlaVal-19
 70-AlaThrCysMetAlaMetVal-76
 92-ValGlnGlnThrGlnGlnAlaProLysProValSerAsnThr-105

Antigenic Index - Jameson-Wolf

26-GlnHisGlyLysGlyAlaAspAla-33
 38-GlySerGlySerGlySerAla-44
 81-HisThrThrLysHisGlyLeuAspPhe-89
 91-AsnValGlnGlnThrGlnGlnAlaProLysProValSerAsnThrGluProSerAlaProValProGlnGlnGlnLys-116

Hydrophilic Regions - Hopp-Woods

28-GlyLysGlyAlaAspAla-33
 97-GlnAlaProLysProValSerAsnThrGluProSerAla-109
a134

AMPHI Regions - AMPHI

39-IleGlnSerAlaGlyThrVal-45
 47-GlyLysLysThrGly-51
 55-SerAspTrpMetAspIleGluLysGlnArg-65
 83-ValAsnLeuLeuAspThrProGlyHis-91
 97-AspThrTyrArgValLeuThrAlaVal-105
 114-AlaAlaLysGlyValGlu-119
 123-IleLysLeuLeuAsnValCysArg-130
 142-LysTyrAspArgGluVal-147
 149-AspSerLeuGluLeuLeuAspGluValGluAsnIleLeuGln-162
 176-LysAsnPhelysGlyValTyrHisIleLeu-185
 201-HisGluPheAspIleIleLysGlyIleAspAsn-211
 254-PheGlySerAlaIle-258
 265-GluIleLeuAsnSerLeuIleGluTrpAla-274
 322-LysPheGluArgGlyMetLys-328
 361-AspIleIleGlyIleProAsnHis-368
 377-PheSerGluGlyGlu-381
 395-LeuPheArgSerValArgIleLys-402
 404-ProLeuLysIleLysGln-409
 411-GlnLysGlyLeuGlnGlnLeuGlyGlu-419
 423-ValGlnValPhelysProMetSer-430
 449-SerArgLeuAlaAsnGluTyr-455
 481-AlaGluPheGluLysAlaAsn-487
 515-ArgTrpProAspIle-519

Antigenic Index - Jameson-Wolf

4-GluIleLeuAspGlnValArgArgArgArgArgThrPhe-15
 19-SerHisProAspAlaGlyLysThrThrLeuThr-29
 43-GlyThrValLysGlyLysLysThrGlyLysPheAlaThr-55
 57-AspTrpMetAspIleGluLysGlnArgGly-66
 76-PheAspTyrLysAspHisThrVal-83

-420-

85-LeuLeuAspThrProGlyHisGlnAspPheSerGluAspThrTyrArg-100
 113-AspAlaAlaLysGlyValGlu-119
 129-CysArgLeuArgAsnThrPro-135
 140-MetAsnLysTyrAspArgGluValArgAspSerLeuGluLeuLeuAspGluValGluAsn-159
 173-GlyMetGlyLysAsnPheLys-179
 194-AlaGlyGlyGluArgLeuProHis-201
 207-LysGlyIleAspAsnProGluLeuGluGlnArgPheProLeu-220
 223-GlnGlnLeuArgAspGluIleGluLeu-231
 235-AlaSerAsnGluPheAsnLeu-241
 275-ProAlaProLysProArgAspAlaThrValArgMetValGluProAspGluProLysPhe-294
 302-GlnAlaAsnMetAspProLysHisArgAspArgIleAla-314
 317-ArgValCysSerGlyLysPheGluArgGlyMetLysMetLysHisLeuArgIleAsnArgGluIleAla-33
 9
 348-SerHisAspArgGluLeuValGlu-355
 365-IleProAsnHisGly-369
 373-IleGlyAspSerPheSerGluGlyGluGln-382
 399-ValArgIleLysAsnProLeuLysIleLysGlnLeuGlnLysGlyLeuGlnGlnLeuGlyGluGluGlyAla-422
 450-ArgLeuAlaAsnGluTyrGlyVal-457
 473-SerCysAspAspLysLysLeuAlaGluPheGluLysAlaAsnAla-488
 503-AlaProAsnArgValAsnLeu-509
 511-LeuThrGlnGluArgTrpProAspIleVal-520
 523-GluThrArgGluHisSerVal-529

Hydrophilic Regions - Hopp-Woods

4-GluIleLeuAspGlnValArgArgArgArgThr-14
 21-ProAspAlaGlyLys-25
 43-GlyThrValLysGlyLysLysThrGlyLys-52
 59-MetAspIleGluLysGlnArgGly-66
 77-AspTyrLysAspHisThr-82
 92-GlnAspPheSerGluAspThrTyr-99
 113-AspAlaAlaLysGlyValGlu-119
 129-CysArgLeuArgAsn-133
 142-LysTyrAspArgGluValArgAspSerLeuGluLeuLeuAspGluValGluAsn-159
 194-AlaGlyGluArgLeuProHis-201
 207-LysGlyIleAspAsnProGluLeuGluGlnArgPheProLeu-220
 223-GlnGlnLeuArgAspGluIleGluLeu-231
 277-ProLysProArgAspAlaThrValArgMetValGluProAspGluProLysPhe-294
 305-MetAspProLysHisArgAspArgIleAla-314
 319-CysSerGlyLysPheGluArgGlyMetLysMetLysHisLeuArgIleAsnArgGluIleAla-339
 348-SerHisAspArgGluLeuValGlu-355
 376-SerPheSerGluGlyGluGln-382
 399-ValArgIleLysAsnProLeuLysIleLysGlnLeuGlnLysGlyLeu-414
 417-LeuGlyGluGlyAla-422
 473-SerCysAspAspLysLysLeuAlaGluPheGluLysAlaAsnAla-488
 512-ThrGlnGluArgTrpPro-517
 523-GluThrArgGluHisSerVal-529
 a135
AMPHI Regions - AMPHI
 29-ThrIleThrArgGlnLeuAlaAlaLeu-37
 85-GluTyrThrAlaAsnLeu-90
 169-AspIleAspGlyLeuTyrThr-175
 185-ValArgLeuAspLysIleGluHis-192
 212-GlyMetLeuThrLysIle-217
 236-LeuLysProAspAla-240

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242-AlaGluAlaAlaAspAsnGln-248
 284-AlaGluHisAlaLeuSer-289
 300-IleAlaGlyIleGluGly-305
 308-SerArgMetAspThrValThrValTyr-316
 318-LysAlaThrLysGlnPro-323
 335-AlaAlaGluAspLeuLeuLysLeuArg-343

Antigenic Index - Jameson-Wolf

1-MetLysTyrLysArgIleVal-7
 11-GlyThrSerSerIleThrHisSerAspGlySerLeuSerArgGlyLysIle-27
 60-GlyPheLysLysArgProValLysIleAlaAspLysGlnAlaSer-74
 90-LeuSerSerAspGlyIle-95
 105-AlaAspPheAlaAspLysArgArgTyrGlnAsnAlaGlyGly-118
 124-LeuGlnArgArgAlaVal-129
 132-IleAsnGluAsnSerThrValSerValGluGluLeuLysIleGlyAspAsnAspThrLeu-151
 176-GlyAsnProAsnSerAsnProAspAlaValArgLeuAspLysIleGluHisIleAsn-194
 202-GlyGlySerGlySerAlaAsnGlyThrGly-211
 215-ThrLysIleLysAla-219
 224-ThrGluSerGlyVal-228
 233-CysSerSerLeuLysProAspAlaLeuAlaGluAlaAlaAspAsnGlnAlaAspGly-251
 257-ArgAlaLysGlyLeuArgThrGlnLysGln-266
 271-TyrSerGluSerArgGlyGlyValTyrValAspGluGlyAlaGluHisAlaLeuSerGluGlnGlyLysSer
 LeuLeu-296
 305-GlyHisPheSerArgMetAspThr-312
 317-SerLysAlaThrLysGlnProLeuGlyLysGlyArgVal-329
 335-AlaAlaGluAspLeuLeuLysLeuArgLysAlaLys-346
 350-IleHisArgAspAspTrpIleSer-357

Hydrophilic Regions - Hopp-Woods

1-MetLysTyrLysArgIleVal-7
 16-ThrHisSerAspGlySerLeuSerArgGlyLysIle-27
 60-GlyPheLysLysArgProValLysIleAlaAspLysGlnAlaSer-74
 105-AlaAspPheAlaAspLysArgArgTyrGlnAsn-115
 124-LeuGlnArgArgAlaVal-129
 133-AsnGluAsnAspThrValSerValGluGluLeuLysIleGlyAspAsnAspThrLeu-151
 178-ProAsnSerAsnProAspAlaValArgLeuAspLysIleGluHisIleAsn-194
 215-ThrLysIleLysAla-219
 236-LeuLysProAspAlaLeuAlaGluAlaAlaAspAsnGlnAlaAsp-250
 257-ArgAlaLysGlyLeuArgThrGlnLys-265
 272-SerGluSerArgGly-276
 278-ValTyrValAspGluGlyAlaGluHisAlaLeuSerGluGlnGlyLys-293
 306-HisPheSerArgMetAspThr-312
 318-LysAlaThrLysGlnProLeuGlyLysGlyArgVal-329
 335-AlaAlaGluAspLeuLeuLysLeuArgLysAlaLys-346
 351-HisArgAspAspTrp-355
a136

AMPHI Regions - AMPHI

50-IleArgGlnCysIleArgGln-56
 84-GlnCysHisAspGlyIleLysGlnLeuPheLysArgPheIleIleAspGlyPheLysProIleGlyArgHis-
 107
 119-CysValLysIleAla-123
 148-ArgHisCysGlnAsn-152
 170-GlnHisPheGlyGlnPro-175
 177-GluArgCysGlnPheVal-182
 194-AsnLeuValAlaThr-198

-422-

210-GlnPheAlaGlnPro-214
 216-PheGlyCysPheGlyLysPheSerGlyIleHisHisPhe-228
 247-LysAlaThrLysProGlnThrValGlnIleValArg-258

Antigenic Index - Jameson-Wolf

1-MetGluThrAsnAla-5
 34-AlaAspGlyLeuArgLeuValAspAspArgLeuProVal-46
 48-ValAspIleArgGlnCysIle-54
 69-LeuGlnThrAspSer-73
 84-GlnCysHisAspGlyIleLysGlnLeuPhe-93
 99-AspGlyPheLysProIleGlyArgHisAsnIle-109
 139-IleArgHisArgGlyGlyCysPheHisArgHisCysGlnAsnGlnProPheAsp-156
 159-ThrPheGlyGlyGlyLysLeuArg-166
 171-HisPheGlyGlnProValGluArg-178
 184-ProAlaGlnGlnArgArgHisLysThr-192
 214-ProProPheGlyCysPheGlyLysPheSerGly-224
 242-AsnLeuAsnGlnAspLysAlaThrLysProGln-252
 257-ValArgGlnGlyGluAlaThrProTyr-265
 270-AsnProLeuTyrArgArgAsnAlaVal-278

Hydrophilic Regions - Hopp-Woods

35-AspGlyLeuArgLeuValAspAspArgLeuProVal-46
 48-ValAspIleArgGlnCysIle-54
 87-AspGlyIleLysGlnLeuPhe-93
 185-AlaGlnGlnArgArgHisLysThr-192
 244-AsnGlnAspLysAlaThrLysProGln-252
 273-TyrArgArgAsnAlaVal-278
a137
AMPHI Regions - AMPHI
 24-LeuSerTyrIleLeuGlyPhe-30
 49-ThrLysGluSerLeu-53
 55-AspPheLeuThrTrpGly-60
 78-PheSerAspTyrLeuAlaHisProLeuAspIlePheLysValTrpGluGlyGly-95
 101-GlyPheLeuGlyValValIle-107
 120-PheLeuLysLeuMetAspThrValAlaProLeuValPro-132
 139-ArgIleGlyAsnPheIle-144
 149-TrpGlyArgValThrAspIleAsnAlaPhe-158
 178-ProLeuTrpAlaGluTrpLeuGlnGlnTyr-187
 190-LeuProArgHisProSerGlnLeu-197
 232-TyrGlyIlePheArgPheIleAlaGluPheAlaArgGlnProAspAspTyrLeuGly-250

Antigenic Index - Jameson-Wolf

36-LeuGlyArgArgArgIleAlaGln-43
 48-PheThrLysGluSerLeuAspAsp-55
 92-TrpGluGlyGlyMet-96
 113-GlyArgLysHisGlyIle-118
 136-AlaSerGlyArgIle-140
 164-ProGlnAlaArgTyrGluAspLeuGluAla-173
 191-ProArgHisProSerGlnLeu-197
 214-PheSerLysLysGlnArgProThrGly-222
 241-PheAlaArgGlnProAspAspTyrLeu-249
 277-PheGlyMetLysGlnHis-283

Hydrophilic Regions - Hopp-Woods

37-GlyArgArgArgIleAla-42

48-PheThrLysGluSerLeuAsp-54
 166-AlaArgTyrGluAspLeuGluAla-173
 216-LysLysGlnArgProThrGly-222
 241-PheAlaArgGlnProAspAspTyr-248
 278-GlyMetLysLysGlnHis-283
 a138

AMPHI Regions - AMPHI
 21-ProTyrIleArgArgPheSerGlySer-29
 74-AsnIlaMetLeuGluLysVal-80
 85-GluPheValGlnGlyMet-90
 109-ValAsnIlysGluIleValSerMetIleAsnThrTyrGly-121
 152-IleGlyGlnValGlyThrValGluSerIle-161
 163-ThrGlyLeuValLysGlyLeu-169
 199-GlyLysLeuAlaGluGluLeu-205
 213-MetThrAsnIleAlaGlyValMetAspLysThrGlyAsnLeuLeuThrLysLeuThr-231
 234-ArgIleAspGluLeuIle-239
 247-GlyMetLeuProLysIleAlaSerAlaValGluAlaAlaValAsn-261
 276-AlaLeuLeuLeuGluIlePheThrAspAla-285

Antigenic Index - Jameson-Wolf
 1-MetGluSerGluAsnIle-6
 9-AlaAlaAspLysAlaArgIleLeu-16
 23-IleArgArgPheSerGlySer-29
 35-TyrGlyGlyAsnAlaMetThr-41
 43-ProAlaLeuLysGluGlyPheAla-50
 68-GlyGlyGlyProGln-72
 76-MetLeuGluLysValGlyLysLysGlyGluPhe-86
 91-ArgValThrAspLysGluAlaMetAsp-99
 109-ValAsnLysGluIle-113
 128-SerGlyArgAspAspHisPheIleLysAlaLysLysLeuLeuIleAspThrProGluGlnAsnGlyValAspIleGlyGln-154
 159-GluSerIleAspThrGlyLeu-165
 169-LeuIleGluArgGlyCysIle-175
 182-GlyValGlyGluIlysGlyGluAla-189
 200-LysLeuAlaGluGluLeuAsnAlaGluLys-209
 219-ValMetAspLysThrGlyAsnLeuLeuThrLysLeuThrProLysArgIleAspGluLeuIleAla-240
 259-AlaValAsnGlyValLys-264
 269-IleAspGlyArgValProAsnAla-276
 292-LeuGlyGlyGluAspAla-298

Hydrophilic Regions - Hopp-Woods
 1-MetGluSerGluAsn-5
 9-AlaAlaAspLysAlaArgIleLeu-16
 43-ProAlaLeuLysGluGlyPheAla-50
 76-MetLeuGluLysValGlyLysLysGlyGluPhe-86
 91-ArgValThrAspLysGluAlaMetAsp-99
 109-ValAsnLysGluIle-113
 128-SerGlyArgAspAspHisPheIleLysAlaLysLysLeuLeuIleAspThrProGluGlnAsnGlyValAsp-151
 183-ValGlyGluLysGlyGluAla-189
 200-LysLeuAlaGluGluLeuAsnAlaGluLys-209
 219-ValMetAspLysThrGly-224
 230-LeuThrProLysArgIleAspGluLeuIleAla-240
 269-IleAspGlyArgVal-273
 294-GlyGlyGluAspAla-298

a140**AMPHI Regions - AMPHI**

10-TyrLeuAsnArgThr-14
 26-IleGlyArgAspTyrSerPhePhe-33
 45-SerLeuAspSerValGluLysThrAlaGly-54
 68-AsnAlaAlaArgThrAlaSer-74
 108-SerAlaThrProGluThrValGluThrAlaAla-118
 135-ArgAlaAlaAlaAlaValGlnHisAlaAsnAlaAlaAspGlyValArgIlePheAsnAsnLeuAlaAlaThr
 Val-159
 175-LeuLysAlaValSerAspGlyLeuAsp-183
 189-LeuArgValIleAlaGln-194
 254-SerLeuPheAlaGly-258
 266-IleGlyTyrLeuLysGlyLeuPheSerTyr-275
 290-GluHisAlaGluGlySer-295
 303-LeuGlyAlaLeuGly-307
 352-GlyThrLeuValGlyLeu-357
 391-GlyGlyPheThrGlyAlaThr-397
 412-ArgLeuValAlaGlyLeu-417
 425-AsnGlyTrpAsnGlyLeuAlaArg-432

Antigenic Index - Jameson-Wolf

2-SerAlaGlyGlyLysGlyAlaGlyTyrLeuAsnArgThrGlyGlnArgValPro-19
 25-LysIleGlyArgAspTyrSer-31
 35-AsnIleGluThrAspGlyGlyLeu-42
 47-AspSerValGluLysThrAlaGlySerGluGlyAspThrLeu-60
 63-TyrValArgArgGlyAsnAlaAlaArgThrAlaSer-74
 86-HisAlaValGluGlnGlySerAsnLeuGlu-96
 102-LeuAspAlaSerGluSerSerAlaThrProGluThrValGlu-115
 117-AlaAlaAlaAspArgThrAspMetProGlyIleArgProTyrGly-131
 144-AsnAlaAlaAspGly-148
 160-TyrAlaAspSerThrAlaAla-166
 169-AspMetGlnGlyArgArgLeuLysAlaValSerAspGlyLeuAspHisAsnAlaThrGly-188
 195-ThrGlnGlnAspGlyGlyThrTrpGluGlnGlyGlyValGluGlyLysMetArgGlySerThrGln-216
 221-AlaAlaLysThrGlyGluAsnThrThr-229
 240-ThrTrpSerGluAsnSerAlaAsnAlaLysThrAspSer-252
 259-IleArgHisAspAlaGlyAsp-265
 274-SerTyrGlyArgTyrLysAsnSerIleSerArgSerThrGlyAlaAspGluHisAlaGluGlySerValAsn
 -297
 315-AlaThrGlyAspLeuThrValGluGlyGlyLeuArg-326
 333-AspAlaPheAlaGlyLysGlySerAlaLeuGlyTrpSerGlyAsnSerIleThrGluGlyThr-353
 362-LeuSerGlnProLeuSerAspGlyAla-370
 377-GlyValGluArgAspLeuAsnGlyArgAspTyrThrVal-389
 399-AlaThrGlyLysThrGlyAlaArgAsnMetProHisThr-411
 421-ValGluPheGlyAsnGlyTrp-427
 434-SerTyrAlaGlySerLysGlnTyrGlyAsnHisSerGlyArgValGlyVal-450

Hydrophilic Regions - Hopp-Woods

3-AlaGlyGlyLysGly-7
 36-IleGluThrAspGly-40
 47-AspSerValGluLysThrAlaGlySerGluGlyAspThr-59
 64-ValArgArgGlyAsnAlaAlaArgThrAlaSer-74
 86-HisAlaValGluGlnGlyGlySerAsnLeu-95
 102-LeuAspAlaSerGluSerAlaThrProGluThrValGlu-115
 117-AlaAlaAlaAspArgThrAspMetProGly-126
 144-AsnAlaAlaAspGly-148

169-AspMetGlnGlyArgArgLeuLysAlaValSerAspGlyLeuAspHisAsnAlaThr-187
 205-GlyGlyValGluGlyLysMetArgGlySerThr-215
 223-LysThrGlyGluAsnThrThr-229
 244-AsnSerAlaAsnAlaLysThrAspSer-252
 259-IleArgHisAspAlaGlyAsp-265
 277-ArgTyrLysAsnSerIleSerArgSerThrGlyAlaAspGluHisAlaGluGlySerVal-296
 333-AspAlaPheAlaGluLysGlySer-340
 364-GlnProLeuSerAspLysAla-370
 377-GlyValGluArgAspLeuAsnGlyArgAspTyrThr-388
 399-AlaThrGlyLysThrGlyAlaArgAsnMetPro-409
a141

AMPHI Regions - AMPHI

11-GlnSerSerThrMetArgProIleGlyGluIle-21
 32-IleGluProTyrGly-36
 44-ProAlaGluAlaPheLysLeuPro-51
 80-AlaAspAlaLeuArgHisIle-86
 131-PheHisAlaIleGlyAla-136
 139-AsnLeuLeuAlaAlaMetLeuAspAsn-147
 174-GlnLeuArgAsnIleIleAspGlyMetGlyLysProValAspGlyValMetArgPro-192
 212-AspIleSerAspLeuLysGluArgLeuGly-221

 245-MetAlaAlaLeuLeuLysAspAlaIleLysProAsnLeu-257

 259-GlnThrIleGluGlyThrPro-265
 272-ProPheAlaAsnIleAlaHisGlyCysAsnSerValThrAlaThrArgLeuAlaLysHisLeuAlaAspTyr
 Ala-296
 330-AlaThrValArgAla-334
 351-LeuAspAlaLeuGluLysGlyLeuProAsnLeuLeuLysHisIleSerAsnLeuLysAsnValPheGly-37
 3
 406-SerLeuThrGluValTrpGlyLys-413
 420-AspLeuAlaArgLysValValAsnAlaIleGluSerGln-432
 473-IleAlaSerLeuGluLys-478
 525-ValAlaLeuCysGlyAsnMetMetLysMetProGlyLeuProLysValProAlaAla-543

Antigenic Index - Jameson-Wolf

3-PheLysThrAspAlaGluIleAlaGlnSerSerThrMetArgProIleGly-19

27-LeuAsnValAspAsnIleGluProTyrGly-36

38-TyrLysAlaLysIleAsnProAlaGluAlaPheLysLeuProGlnLysGlnGlyArg-56
 64-AsnProThrProAlaGlyGluGlyLysThrThr-74
 81-AspAlaLeuArgHisIleGlyLysAspSerValIleAlaLeuArgGluProSerLeuGlyPro-101
 105-ValLysGlyGlyAlaAlaGlyGlyGly-113
 151-GlnGlyAsnGluLeuAsnIleAspProLysArgValLeuTrp-164

 166-ArgValValAspMetAsnAspArgGlnLeuArgAsnIleIleAspGlyMetGlyLysProValAspGlyVal
 MetArgProAspGlyPheAspIle-197
 211-LysAspIleSerAspLeuLysGluArgLeuGly-221
 227-TyrAlaLysAspGlySerProValTyr-235

 237-LysAspLeuLysAlaAsnGly-243
 251-AspAlaIleLysProAsnLeu-257
 287-ArgLeuAlaLysHisLeuAla-293
 306-LeuGlyAlaGluLysPheCysAspIleLysCysArgLeuAlaGlyLeuLysProAspAla-325

-426-

335-LeuLysTyrAsnGlyGlyValGluArgAlaAsnLeuGlyGluGluAsnLeuAspAlaLeuGluLysGlyLeu
 ProAsnLeu-361
 383-PheValSerAspSerAspAlaGluLeuAlaMetIleGluLysAlaCysAla-399

411-TrpGlyLysGlyGlyAlaGlyGlyAlaAspLeuAlaArgLysValValAsn-427

429-IleGluSerGlnThrAsnAsnPheGly-437
 444-LeuGlyIleLysAspLysIleArgAlaIleAla-454
 458-TyrGlyAlaGluAspValAspPheSerAla-467

474-AlaSerLeuGluLysLeuGlyLeuAspLysMetPro-485
 494-SerLeuSerAspAsnAlaLysLeu-501

503-GlyCysProGluAspPheArgIle-510

534-MetProGlyLeuPro-538
 541-ProAlaAlaGluLysIleAspValAspAlaGluGly-552

Hydrophilic Regions - Hopp-Woods
 3-PheLysThrAspAlaGluIleAlaGln-11

38-TyrLysAlaLysIleAsnPro-44

46-GluAlaPheLysLeuProGlnLysGlnGlyArg-56
 67-ProAlaGlyGluGlyLysThr-73
 81-AspAlaLeuArgHisIleGlyLysAspSerValIleAlaLeuArgGluProSer-98
 155-LeuAsnIleAspProLysArgValLeuTrp-164

166-ArgValValAspMetAsnAspArgGlnLeuArgAsnIleIle-179

181-GlyMetGlyLysProValAspGlyValMetArgProAspGlyPhe-195
 211-LysAspIleSerAspLeuLysGluArgLeuGly-221
 228-AlaLysAspGlySer-232
 237-LysAspLeuLysAla-241
 287-ArgLeuAlaLysHisLeuAla-293
 306-LeuGlyAlaGluLysPheCysAspIleLysCysArgLeuAlaGlyLeuLysProAspAla-325
 339-GlyGlyValGluArgAlaAsnLeuGlyGluGluAsnLeuAspAlaLeuGluLysGlyLeu-358
 383-PheValSerAspSerAspAlaGluLeuAlaMetIleGluLysAlaCysAla-399

420-AspLeuAlaArgLysValValAsn-427
 444-LeuGlyIleLysAspLysIleArgAlaIleAla-454
 458-TyrGlyAlaGluAspValAspPheSerAla-467

474-AlaSerLeuGluLysLeuGlyLeuAspLysMetPro-485
 503-GlyCysProGluAspPheArgIle-510

541-ProAlaAlaGluLysIleAspValAspAlaGluGly-552
a142

AMPHI Regions - AMPHI
 26-ArgPheAlaAlaMetProAspValValGlyLys-36
 44-GlyGlnProGlyLysMetPhe-50
 100-AlaValThrProCysArg-105
 107-ValCysArgAspAspMetAsn-113
 118-GlyCysHisArgIleThrGluArgSerLeuLysSerPheLeuGlnIleArgHisPheSerProLeu-139
 174-LeuArgValGlnArgIleLeuAspPheGlyLysPheCysGlnGlnVal-189

-427-

202-LeuAspSerValValThrLeuValHisPhePheAlaAspPheLeuIle-217
 239-AlaAspAsnGlnThrArgPhePheLysAlaGly-249
 259-AsnAlaArgLeuIleArgGlnIleLeuLys-268

Antigenic Index - Jameson-Wolf

31-ProAspValValGly-35
 38-LeuPheGlyArgGlnAlaGlyGlnProGlyLysMet-49
 59-GlnArgIleAspAlaGluAlaAlaValPheArgGlnAspArgAsnAspSerArgThrProValAspAlaGlnH
 isHisGlyArgArgLeuValArgAsnArgAsnArgArgAsnArgArgHisCysAsnAla-100
 102-ThrProCysArgThrValCysArgAspAspMetAsnAlaCysArgThrGlyCysHisArgIleThrGluArg
 SerLeuLys-128
 147-AlaAlaHisLysAla-151
 153-ProMetCysSerSerSerAspSerLysSerArgArgSerAspIleSerAlaArgTyr-171
 180-LeuAspPheGlyLysPheCys-186
 225-GlnLeuGlnLysAsnThrSer-231
 237-PheGlnAlaAspAsnGlnThrArgPhePheLysAlaGlyGlnAspThrGlyGlnAlaGlyAlaGinAsn-25
 9
 267-LeuLysValGlnArgAlaValPheArgGlnLysThrAspAsnProPro-282
 291-IleGlnAsnArgProGluLeuGlyHisGlnGly-301
 307-GlnThrAspIleAspArgArgMetPhe-315

Hydrophilic Regions - Hopp-Woods

42-GlnAlaGlyGlnPro-46
 59-GlnArgIleAspAlaGluAlaAlaValPheArgGlnAspArgAsnAspSerArgThrProValAspAlaGlnH
 isHisGlyArgArgLeuValArgAsnArgArgAsnArgArgHisCys-98
 106-ThrValCysArgAspAspMetAsnAlaCysArg-116
 121-AргIleThrGluArgSerLeuLys-128
 147-AlaAlaHisLysAla-151
 156-SerSerSerAspSerLysSerArgArgSerAspIleSerAla-169
 237-PheGlnAlaAspAsnGlnThrArgPhePheLysAlaGlyGlnAspThrGlyGln-254
 267-LeuLysValGlnArgAlaValPheArgGlnLysThrAspAsn-280
 291-IleGlnAsnArgProGluLeuGly-298
 309-AspIleAspArgArgMetPhe-315
 a144

AMPHI Regions - AMPHI

36-LeuGlyGlyIleValGlnGluPhe-43
 45-ValLeuAlaAspGlyValArg-51
 71-IleAsnLysGlnIleGlyArgValAlaGlyArg-81
 136-ValGlyArgArgLeu-140
 159-TyrArgTyrLeuSerArgHis-165
 185-GlyProAlaArgCysGlySerAlaTyrSerAlaGly-196
 200-SerGlyArgCysArglysThrAlaArgLeuAsnGlyPheArgArgProArgSer-217

Antigenic Index - Jameson-Wolf

1-MetSerAspThrProAlaThrArgAspPheGlyLeuIleAspGlyArgAla-17
 23-LeuSerAsnArgArgGlyThrArg-30
 48-AspGlyValArgGlu-52
 58-PheAspAspAlaAlaSerTyrAlaAspAsnProPheGlnIleAsn-72
 78-ValAlaGlyArgIleArgGlyAlaAla-86
 88-AspIleAsnGlyArgThrTyrArgGluAlaAsnGluGlyArgAsnAlaLeuHisGlyGlySerHis-110
 121-AlaAlaAspGlyArgSerValValLeu-129
 135-ThrValGlyArgArgLeuSerGlnArgPheGly-145
 151-ProLeuGlyArgGlyArgProAlaTyr-159
 161-TyrLeuSerArgHisArgAlaArgArgHisGlyValArgProAspAlaAlaHis-178
 182-AlaGlyArgGlyProAlaArgCysGlySer-191

194-SerAlaGlyArgThrTyrSerGlyArgCysArgLysThrAlaArgLeuAsnGlyPheArgArgProArgSer
Ile-218

Hydrophilic Regions - Hopp-Woods

1-MetSerAspThrProAlaThrArgAsp-9
24-SerAsnArgArgGlyThrArg-30
48-AspGlyValArgGlu-52
58-PheAspAspAlaAlaSer-63
78-ValAlaGlyArgIleArgGlyAlaAla-86
89-IleAsnGlyArgThrTyrArgValGlu-AlaAsnGluGlyArgAsnAlaLeu-105
121-AlaAlaAspGlyArgSerValValLeu-129
135-ThrValGlyArgArgLeuSerGln-142
153-GlyArgGlyArgProAla-158
163-SerArgHisArgAlaArgArgHisGlyValArgProAspAla-176
183-GlyArgGlyProAlaArgCys-189
197-ArgThrTyrSerGlyArgCysArgLysThrAlaArg-208
210-AsnGlyPheArgArgProArgSerIle-218
a146

AMPHI Regions - AMPHI

19-GluGlnTyrGlyLeuPheAspPheMetProCys-29
34-ProLeuAspAsnPheProThrVal-41
64-GlyPheGlyGlnArgIleSerAsnLeuSerArg-74
95-LeuArgAlaCysAla-99
105-HisValArgValPheGlnLys-111
140-ThrArgArgValArg-144
158-ArgHisGlnArgGlyPheAlaArg-165

Antigenic Index - Jameson-Wolf

6-LeuArgProArgGlnValIleIleAspHisAspLysIleGluGln-20
29-CysLeuArgGlnProProLeuAspAsn-37
41-ValArgProAlaSerValGluThrArgSerLysHisIleGluArgArgGlnAspLysAspAlaAspGlyP
heGlyGlnArgIleSerAsnLeuSer-73
86-ThrCysArgArgGlnArgIleHisThr-94
112-SerLeuLeuArgAspLysArgLeuLys-120
138-ArgArgThrArgArgValArgHisGlyAsnAlaGln-149
155-GlnGlnProArgHisGlnArgGlyPheAla-164
166-AlaGlySerGlyArgAsnAspLysAspValAlaPheSerIle-179
195-GlnArgThrProGlyPhe-200

Hydrophilic Regions - Hopp-Woods

6-LeuArgProArgGlnValIleIleAspHisAspLysIleGluGln-20
44-AlaSerValGluThrArgSerLysHisIleGluArgArgGlnAspLysAspAlaAspGlyPheGly-66
86-ThrCysArgArgGlnArgIleHisThr-94
112-SerLeuLeuArgAspLysArgLeuLys-120
138-ArgArgThrArgArgValArgHisGlyAsn-147
156-GlnProArgHisGlnArgGlyPheAla-164
167-GlySerGlyArgAsnAspLysAspValAla-176
a148

AMPHI Regions - AMPHI

25-AlaAspLysIleArgLysIleGluAsnTrpPro-35
49-GlnSerAlaGluTyrPheArgLeuLeuValaspLeu-60
150-AlaGlyLeuGluLeuIleArgLysLeuGlyGlyGluIle-162
165-AlaAlaAlaIleLeuGluPheThrAspLeuGlnGlyGlyLysAsnIleArg-181

Antigenic Index - Jameson-Wolf

4-LysThrSerAsnLeu-8
 24-LeuAlaAspLysIleArgLysIleGluAsnTrpProGlnLysGly-38
 66-MetAspGlnLysIleAspIle-72
 76-LeuAspAlaArgGly-80
 97-ProIleArgLysGlyLysLeuPro-105
 117-TyrGlyGluAlaAlaVal-122
 124-IleHisThrAspAlaValLysLeuGlySer-133
 153-GluLeuIleArgLysLeuGlyGlyGluIleValGlu-164
 172-ThrAspLeuGlnGlyGlyLysAsnIleArgAlaSerGlyAlaPro-186
 192-GlnAsnGluGlyCysMetLysGly-199

Hydrophilic Regions - Hopp-Woods

24-LeuAlaAspLysIleArgLysIleGluAsnTrpPro-35
 66-MetAspGlnLysIleAspIle-72
 97-ProIleArgLysGlyLysLeuPro-105
 117-TyrGlyGluAlaAlaVal-122
 124-IleHisThrAspAlaValLysLeuGlySer-133
 153-GluLeuIleArgLysLeuGlyGlyGluIleValGlu-164
 178-LysAsnIleArgAlaSerGly-184
 195-GlyCysMetLysGly-199

a149**AMPHI Regions - AMPHI**

72-AsnLeuGlyAspAlaLeuAspGlyValProGlyIle-83
 101-ThrGlyArgArgIleLeuLeuAsnHisHisGlyGluThrGlyAspMet-117
 135-GlnValGluIleLeuArgGlyProValThr-144
 152-ValAlaGlyLeuValAsp-157
 164-ProGluLysMetProGluAsnGlyVal-172
 184-AsnLeuGluLysLeu-188
 220-TyrArgAsnLeuLysArgLeuProAspSerHis-230
 345-PheProGlyPheGlu-349
 366-AlaGlyAspAlaValGluAsnPhePheAsnAsn-376
 389-ProIleGlyArgLeuLys-394
 411-AlaThrSerGluAla-415
 565-ArgPheGlyAsnTyrIleTyrAlaGln-573
 576-AsnAspGlyArgGlyProLysSerIleGluAsp-586
 627-ArgGlyArgLeuLysAsnLeuProSer-635

Antigenic Index - Jameson-Wolf

23-GlnAlaHisGlyThrGluGlnSerVal-31
 40-GlyLysSerArgProArgAlaThrSerGly-49
 55-ThrAlaSerAspLysIleIleSerGlyAspThrLeuArgGlnLysAla-70
 97-IleArgGlyGlnThrGlyArgArgIleLysVal-107
 109-AsnHisHisGlyGluThrGlyAspMetAlaAspPheSerProAspHis-124
 137-GluIleLeuArgGlyPro-142
 157-AspValAlaAspGlyLysIleProGluLysMetProGluAsnGlyValSerGlyGluLeuGlyLeu-178
 180-LeuSerSerGlyAsnLeuGluLysLeuThrSerGlyGly-192
 207-GlyLeuTyrArgLysSerGlyAspTyrAlaValProArgTyrArgAsnLeuLysArgLeuProAspSerHis
 AlaAspSerGlnThrGly-236
 244-GlyGluLysGlyPhe-248
 252-AlaTyrSerAspArgArgAspGlnTyrGly-261
 263-ProAlaHisSerHisGluTyrAspAspCysHisAla-274
 281-SerLeuIleAsnLysArgTyrLeu-288
 295-LeuThrGluGluAspIleAspTyrAspAsnProGlyLeu-307
 310-GlyPheHisAspAspAspAspAlaHis-318

321-AlaHisAsnGlyLysProTrpIleAspLeuArgAsnLysArgTyrGluLeuArgAlaGluTrpLysGlnPro
 PheProGly-347
 354-HisLeuAsnArgAsnAspTyrArgHisAspGluLysAlaGlyAspAlaVal-370
 374-PheAsnAsnGlnThrGlnAsnAlaArgIleGluLeuArgHisGlnProIleGlyArgLeuLysGlySerTrp
 -397
 402-LeuGlyGlnLysSerSerAlaLeu-409
 411-AlaThrSerGluAlaValLys-417
 422-LeuAspAsnLysVal-426
 437-AlaAsnTrpAspAsnPheThrLeuGluGlyGlyValArgValGluLysGlnLysAlaSerIleArgTyrAsp
 LysAlaLeuIleAspArgGluAsnTyrTyrAsnHisProLeuProAsp-476
 478-GlyAlaHisArgGlnThrAla-484
 506-SerHisGlnGluArgLeuProSerThrGlnGluLeuTyrAlaHisGly-521
 531-ValGlyAsnLysHisLeuAsnIlysGluArgSerAsnAsnIle-544
 550-TyrGluGlyAspArgTrpGln-556
 562-TyrArgAsnArgPheGlyAsn-568
 574-ThrLeuAsnAspGlyArgGlyProLysSerIleGluAspAspSerGluMetLysLeu-592
 594-ArgTyrAsnGlnSerGlyAlaAspPheTyrGlyAlaGluGly-607
 609-IleTyrPheLysProThrProArgTyrArgIle-619
 621-ValSerGlyAspTyrValArgGlyArgLeuLysAsnLeuProSerLeuProGlyArgGluAspAlaTyrGly
 AsnArg-646
 651-GlnAlaAspGlnAsnAlaProArgValProAla-661
 671-SerLeuThrAspArgIleAspAla-678
 689-AspLysLeuAlaArgTyrGluThrArgThrProGlyHis-701
 707-GlyAlaAsnTyrArgAsnTyrArgTyrGluTrp-719
 725-AlaAspAsnLeuLeu-729
 739-PheLeuSerAspThrProGlnMetGlyArgSerPheThrGlyGlyVal-754

Hydrophilic Regions - Hopp-Woods

25-HisGlyThrGluGln-29
 40-GlyLysSerArgProArgAlaThr-47
 55-ThrAlaSerAspLysIleIleSer-62
 64-AspThrLeuArgGlnLysAla-70
 100-GlnThrGlyArgArgIleLysVal-107
 112-GlyGluIleThrGlyAspMetAlaAspPheSerPro-122
 157-AspValAlaAspGlyLysIleProGluLysMetProGluAsnGlyValSer-173
 181-SerSerGlyAsnLeuGluLysLeuThr-189
 207-GlyLeuTyrArgLysSerGlyAsp-214
 219-ArgTyrArgAsnLeuLysArgLeuProAspSerHisAlaAspSerGlnThr-235
 253-TyrSerAspArgArgAspGlnTyr-260
 267-HisGluIleTyrAspAspCysHisAla-274
 295-LeuIleThrGluAspIleAspTyrAspAsn-304
 311-PheHisAspAspAspAspAlaHis-318
 330-LeuArgAsnLysArgTyrGluLeuArgAlaGluTrp-341
 354-HisLeuAsnArgAsnAspTyrArgHisAspGluLysAlaGlyAspAlaVal-370
 378-ThrGlnAsnAlaArgIleGluLeuArgHis-387
 391-GlyArgLeuLysGly-395
 411-AlaThrSerGluAlaValLys-417
 446-GlyGlyValArgValGluLysGlnLysAlaSerIleArgTyrAspLysAlaLeuIleAspArgGluAsnTyr
 -469
 478-GlyAlaHisArgGlnThrAla-484
 506-SerHisGlnGluArgLeuProSer-513
 535-HisLeuAsnLysGluArgSerAsnAsn-543
 550-TyrGluGlyAspArgTrp-555
 575-LeuAsnAspGlyArgGlyProLysSerIleGluAspAspSerGluMetLysLeu-592
 603-TyrGlyAlaGluGly-607

613-ProThrProArgTyrArgIle-619
 624-AspTyrValArgGlyArgLeuLysAsn-632
 637-ProGlyArgGluaspAlaTyrGly-644
 652-AlaAspGlnAsnAlaProArgValProAla-661
 671-SerLeuThrAspArgIleAspAla-678
 690-LysLeuAlaArgTyrGluThrArgThrProGly-700
 709-AsnTyrArgArgAsnThrArgTyrGly-717
a150

AMPHI Regions - AMPHI

1-MetGlnAsnThrAsnProProLeuProProMetProProGluIleThrGlnLeuLeuSerGlyLeuAspAlaAla
 aGlnTrpAlaTrpLeuSerGlyTyrAlaTrpAlaLysAlaGlyAsnGlyAlaSerAlaGlyLeuProAlaLeuGln
 ThrAlaLeuProThrAlaGluProProSerValThrValLeuSerAlaSerGlnThrGlyAsnAlaLysSerValA
 laAspLysAlaAlaAspSerLeuGluAlaAlaGlyIleGlnValSerArgAlaGluLeuLysAspTyrLysAlaLys
 sAsnIleGlyGluArgArgLeuLeuValThrSerGlnGlyGluGlyGluProProGluGluAlaVal
 ValLeuHisLysLeuLeuAsnGlyLysLysAlaProLeuAspLysLeuGlnPheAlaValLeuGlyLeuGlyA
 spSerSerTyrProAsnpheCysArgAlaGlyLysAspPheAspLysArgPheGluGluLeuGlyAlaLysArgLe
 uLeuGluArgValAspAlaAspLeuAspPheAlaAlaAlaAspGlyTrpThrAspAsnIleAlaAlaLeuLeu
 LysGluGluAlaAlaLysAsnArgAlaThrProAlaProGlnThrThrProProAlaGlyLeuGlnThrAlaProA
 spGlyArgTyrCysLysAlaAspProPheProAlaAlaLeuLeuAsnGlnLysIleThrAlaArgGlnSerAs
 pLysAspValArgHisIleGluLeuAspSerGlySerAspLeuHisTyrLeuProGlyAspAlaLeuGlyVal
 TrpPheAspAsnProAlaLeuValArgGluIleLeuAspGlyIleAspGlnAlaThrGluIleGlnA
 laGlyGlyLysThrLeuProValAlaSerAlaLeuSerGlyLeuGlyLeuLeuGlyLeuGlyAlaVal
 ValGlyAlaValArgValArgAsnGlyPheAspArgLeuProGluAspSerArgLysProIleV
 alMetIleGlySerGlyThrGlyValAlaProPheArgAlaLeuGlyLeuGlyLeuGlyAlaGluGluGluGlu
 yLysAsnTrpLeuPhePheGlyAsnProHisPheAlaArgAspPheLeuTyrGlnThrGluTrpGlnGlnPheAla
 LysAspPheGlyHisArgTyrAspPheAlaTrpSerArgAspGlnGluGluLysIleTyrValGlnAspLysI
 leArgGluGlnAlaGluGlyLeuTrpGlnTrpLeuGlnGluGlyAlaHisIleTyrValCysGlyAspAlaAlaLys
 sMetAlaLysAspValGluAlaAlaLeuLeuAspValIleIleGlyAlaGlyHisLeuAspGluGluGlyAlaGlu
 GluTyrLeuAspMetLeuArgGluGluLysArgTyrGlnArgAspValTyr-599

Antigenic Index - Jameson-Wolf

1-MetGlnAsnThrAsnProProLeuProProMetProProGluIleThrGlnLeuLeuSerGlyLeuAspAlaAla
 aGlnTrpAlaTrpLeuSerGlyTyrAlaTrpAlaLysAlaGlyAsnGlyAlaSerAlaGlyLeuProAlaLeuGln
 ThrAlaLeuProThrAlaGluProProSerValThrValLeuSerAlaSerGlnThrGlyAsnAlaLysSerValA
 laAspLysAlaAlaAspSerLeuGluAlaAlaGlyIleGlnValSerArgAlaGluLeuLysAspTyrLysAlaLys
 sAsnIleGlyGluArgArgLeuLeuValThrSerGlnGlyGluGlyGluProProGluGluAlaVal
 ValLeuHisLysLeuLeuAsnGlyLysLysAlaProLeuAspLysLeuGlnPheAlaValLeuGlyLeuGlyA
 spSerSerTyrProAsnpheCysArgAlaGlyLysAspPheAspLysArgPheGluGluLeuGlyAlaLysArgLe
 uLeuGluArgValAspAlaAspLeuAspPheAlaAlaAlaAspGlyTrpThrAspAsnIleAlaAlaLeuLeu
 LysGluGluAlaAlaLysAsnArgAlaThrProAlaProGlnThrThrProProAlaGlyLeuGlnThrAlaProA
 spGlyArgTyrCysLysAlaAspProPheProAlaAlaLeuLeuAsnGlnLysIleThrAlaArgGlnSerAs
 pLysAspValArgHisIleGluLeuAspSerGlySerAspLeuHisTyrLeuProGlyAspAlaLeuGlyVal
 TrpPheAspAsnProAlaLeuValArgGluIleLeuAspPheAlaGlyIleAspGlnAlaThrGluIleGlnA
 laGlyGlyLysThrLeuProValAlaSerAlaLeuSerGlyLeuGlyLeuLeuGlyLeuGlyAlaVal
 ValGlyAlaValArgValArgAsnGlyPheAspArgLeuProGluAspSerArgLysProIleV
 alMetIleGlySerGlyThrGlyValAlaProPheArgAlaLeuGlyLeuGlyAlaGluGluGluGlu
 yLysAsnTrpLeuPhePheGlyAsnProHisPheAlaArgAspPheLeuTyrGlnThrGluTrpGlnGlnPheAla

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LysAspGlyPheLeuHisArgTyrAspPheAlaTrpSerArgAspGlnGluGluLysIleTyrValGlnAspLysI
 LeArgGluGlnAlaGluGlyLeuTrpGlnTrpLeuGlnGluGlyAlaHisIleTyrValCysGlyAspAlaAlaLy
 sMetAlaLysAspValGluAlaAlaLeuLeuAspValIleIleGlyAlaGlyHisLeuAspGluGluGlyAlaGlu
 GluTyrLeuAspMetLeuArgGluGluLysArgTyrGlnArgAspValTyr-599

Hydrophilic Regions - Hopp-Woods

1-MetGlnAsnThrAsnProProLeuProProMetProProGluIleThrGlnLeuLeuSerGlyLeuAspAlaAl
 aGlnTrpAlaTrpLeuSerGlyTyrAlaTrpAlaLysAlaGlyAsnGlyAlaSerAlaGlyLeuProAlaLeuGln
 ThrAlaLeuProThrAlaGluProProSerValThrValLeuSerAlaSerGlnThrGlyAsnAlaLysSerValA
 laAspLysAlaAlaAspSerLeuGluAlaAlaGlyIleGlnValSerArgAlaGluLeuLysAspTyrLysAlaY
 sAsnIleAlaGlyGluArgLeuLeuLeuValThrSerThrGlnGlyGluGlyGluProProGluGluAlaVal
 ValLeuHisLeuLeuAsnGlyLysLysAlaProLysLeuAspLeuGlnPheAlaValLeuGlyLeuGlyA
 spSerSerTyrProAsnPhcEysArgAlaGlyLysAspPheAspLysArgPheGluGluLeuGlyAlaLysArgLe
 uLeuGluArgValAspAlaAspLeuAspPheAlaAlaAlaAspGlyTrpThrAspAsnIleAlaAlaLeuLeu
 LysGluGluAlaAlaLysAsnArgAlaThrProAlaProGlnThrThrProProAlaGlyLeuGlnThrAlaProA
 spGlyArgTyrCysLysAlaAspProPheProAlaAlaLeuLeuAlaAsnGlnIleThrAlaArgGlnSerAs
 pLysAspValArgHisIleGluIleAspLeuSerGlySerAspLeuHisTyrLeuProGlyAspAlaLeuGlyVal
 TrpPheAspAsnAspProAlaLeuValArgGluIleLeuAspLeuGlyIleAspGlnAlaThrGluIleGinA
 laGlyGlyLysThrLeuProValAserAlaLeuLeuSerHisPheGluLeuThrGlnAsnThrProAlaPheVa
 lLysGlyTyrAlaProPheAlaAspAspAspGluLeuAspArgIleAlaAlaAspAsnAlaValLeuGlnGlyPhe
 ValGlnSerThrProIleAlaAspValLeuHisArgPheProAlaLysLeuThrAlaGluGlnPheAlaGlyLeuL
 euArgProLeuAlaProArgLeuTyrSerIleSerSerGlnAlaGluValGlyAspGluValHisLeuThrVa
 lGlyAlaValArgPheGluHisGluGlyArgAlaArgAlaGlyGlyAlaSerGlyPheLeuAlaAspArgLeuGlu
 GluGlyPheThrValArgValPheValGluArgAsnAspGlyPheArgLeuProGluAspSerArgLysProIleV
 alMetIleGlySerGlyThrGlyValAlaProPheAlaGlyLeuGlnGlnArgAlaAlaGluAsnAlaGluGlyL
 yLysAsnTrpLeuPhePheGlyAsnProHisPheAlaArgAspPheLeuTyrGlnThrGluTrpGlnGlnPheAla
 LysAspPheLeuHisArgTyrAspPheAlaTrpSerArgAspGlnGluGlyIleTyrValGlnAspLysI
 leArgGluGlnAlaGluGlyLeuTrpGlnTrpLeuGlnGluGlyAlaHisIleTyrValCysGlyAspAlaAlaLy
 sMetAlaLysAspValGluAlaAlaLeuLeuAspValIleIleGlyAlaGlyHisLeuAspGluGluGlyAlaGlu
 GluTyrLeuAspMetLeuArgGluGluLysArgTyrGlnArgAspValTyr-599

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AMPHI Regions - AMPHI

6-AsnIleAlaIleIleAla-11
 22-AspGlnLeuLeuArg-26
 72-ValAspThrProGlyHis-77
 81-GlyGlyGluValGluArgValLeuGlyMetValAspCysVal-94
 128-LysIleAspLysPro-132
 144-PheGluLeuPheAspAsnLeuGlyAlaThr-153
 165-SerGlyLeuSerGlyPheAlaLysLeuGluGluThrAspGluSerAsn-180
 184-ProLeuPheAspThrIleLeuLysTyrThr-193
 248-GlyArgIleAsnGlnLeuLeuGlyPheLysGlyLeuGluArgVal-262
 273-ValIleIleSerGlyIleGlu-279
 330-IleArgAspArgLeuGlnLysGluLeu-338
 348-AspThrAlaAspAla-352
 396-CysGluProTyrGluAsnLeuThrValAsp-405
 457-LeuThrArgGlyValGly-462
 464-MetSerHisValPheAsp-469
 537-LysGlyLysLeuThrAsnIle-544
 551-GluAlaValArgLeuThrThr-557

Antigenic Index - Jameson-Wolf

1-MetLysGlnIleArg-5
 13-ValAspHisGlyLysThrThrLeu-20
 24-LeuLeuArgGlnSerGlyThrPheArgAlaAsnGlnGlnValAspGluArgValMetAspSerAsnAspLeuG
 luLysGluArgGlyIle-53

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59-AsnThrAlaIleAspTyrGluGlyTyr-67
 72-ValAspThrProGlyHisAlaAspPheGlyGlyGluValGluArg-86
 99-AspAlaGlnGluGlyProMetProGlnThrArgPheValThr-112
 128-LysIleAspLysProSerAlaArgProSerTrp-138
 151-GlyAlaThrAspGlnLeuAsp-158
 171-AlaLysLeuGluGluThrAspGluSerAsnAspMetArgProLeu-185
 193-ThrProAlaProSerGlySerAlaAspGluThrLeu-204
 211-LeuAspTyrAspAsnTyrThrGly-218
 226-LeuAsnGlyArgIleLysProGlyGln-234
 240-AsnHisAspGlnGlnIleAla-246
 257-LysGlyLeuGluArgValProLeuGluGluAlaGluAlaGlyAsp-271
 277-GlyIleGluAspIleGly-282
 287-IleThrAspLysAspAsnProLysGlyLeuPro-297
 300-SerValAspGluProThrLeu-306
 314-ThrSerProLeuAlaGlyThrGluGlyLysPheValThrSerArgGlnIleArgAspArgLeuGlnLysGlu
 LeuLeu-339
 344-LeuArgValGluAspThrAlaAspAlaAspValPheArgValSerGlyArgGlyGluLeu-363
 371-AsnMetArgArgGluGlyTyr-377
 381-ValGlyLysProArgValValTyrArgAspIleAspGlyGlnLysCysGluProTyrGluAsnLeuThrVal
 AspValProAspAspAsnGlnGlyAlaValMetGluGluLeuGlyArgArgGlyGluLeuThrAsnMetGluS
 erAspGlyAsnGlyArgThrArgLeuGluTyr-440
 467-ValPheAspTyrAlaProValLysProAspMetProGlyArgHisAsnGly-484
 489-GlnGluGlnGlyGlu-493
 501-LeuGluAspArgGlyArgMetPheValSerProAsnAspLysIleTyr-517
 524-IleHisSerArgAspAsnAspLeu-531
 535-ProLeuLysGlyLysLysLeuThrAsnIleArgAlaSerGlyThrAspGluAlaValArg-554
 569-PheIleAspAspAspGluLeuValGlu-577
 579-ThrProGlnSerIleArgLeuArgLysArgTyrLeuSerGluLeuGluArgArgArgHisPheLysLysLeu
 Asp-603

Hydrophilic Regions - Hopp-Woods

1-MetLysGlnIleArg-5
 29-GlyThrPheArgAla-33
 35-GlnGlnValAspGlyArgValMetAspSerAsnAspLeuGluLysGluArgGlyIle-53
 80-PheGlyGlyGluValGluArg-86
 99-AspAlaGlnGluGlyProMetPro-106
 128-LysIleAspLysProSerAla-134
 151-GlyAlaThrAspGluGlnLeuAsp-158
 171-AlaLysLeuGluGluThrAspGluSerAsnAspMetArgProLeu-185
 198-GlySerAlaAspGluThrLeu-204
 226-LeuAsnGlyArgIleLysPro-232
 241-HisAspGlnGlnIleAla-246
 258-GlyLeuGluArgValProLeuGluGluAlaGluAlaGlyAsp-271
 277-GlyIleGluAspIleGly-282
 287-IleThrAspLysAspAsnProLysGly-295
 300-SerValAspGluProThrLeu-306
 318-AlaGlyThrGluGlyLysPheValThr-326
 328-ArgGlnIleArgAspArgLeuGlnLysGluLeuLeu-339
 344-LeuArgValGluAspThrAlaAspAlaAspValPheArgValSerGlyArgGlyGluLeu-363
 371-AsnMetArgArgGluGlyTyr-377
 381-ValGlyLysProArgValValTyrArgAspIleAspGlyGlnLysCysGluProTyrGlu-400
 405-AspValProAspAspAsnGlnGlyAlaValMetGluGluLeuGlyArgArgGlyGluLeuThrAsnMet
 GluSerAspGlyAsnGlyArgThrArgLeu-438
 472-AlaProValLysProAspMetProGlyArgHis-482
 489-GlnGluGlnGlyGlu-493

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502-LeuGluAspArgGlyArgMet-508
 512-ProAsnAspLysIleTyr-517
 525-HisSerArgAspAsnAspLeu-531
 536-LeuLysGlyLysLysLeuThrAsn-543
 545-ArgAlaSerGlyThrAspGluAlaValArg-554
 569-PheIleAspAspAspGluLeuValGlu-577
 583-IleArgLeuArgLysArgTyrLeuSerGluLeuGluArgArgArgHisPheLysLysLeuAsp-603
a152
AMPHI Regions - AMPHI
 10-PheProThrArgLeuPhe-15
 66-ArgPheSerArgPheArgGlyTrpSerGlyIleArgGluTyrMetLysAsnGlyIleProGluHisValG
 lnProGlyHisAsnProLeu-96
 103-AlaLeuLeuAlaAla-107
 130-LeuAsnHisLeuValSerGluHisThrGlySerLeu-141
 150-PheLysLeuLeuAlaValPheSerAlaValHisIleAlaXxxValAlaAlaTyr-167

Antigenic Index - Jameson-Wolf
 1-MetLysAsnLysThrLysValTrp-8
 28-TyrSerAlaLysThrGlyGlyAsp-35
 61-GlySerAspThrAlaArgPhe-67
 74-TrpSerGlyIleArgGluTyrMetLysAsnGlyIleProGluHisValGlnProGlyHisAsnProLeu-96
 125-SerThrAsnGlyTyr-129
 137-HisThrGlySerLeuMetArg-143
 169-ValPheLysLysLysAsnLeu-175
 186-IleGluGlyLysThrSerIle-192

Hydrophilic Regions - Hopp-Woods
 1-MetLysAsnLysThrLysVal-7
 63-AspThrAlaArgPhe-67
 78-ArgGluTyrMetLys-82
 169-ValPheLysLysLysAsnLeu-175
 186-IleGluGlyLysThrSerIle-192
a153

AMPHI Regions - AMPHI
 17-AlaAlaSerValLeuSerLeuProGluMetMetArgLeuMetValPhe-32
 96-ThrLeuValAlaTyrIleLysLeuSerSerValAlaGlu-108
 130-ValSerValProGlnHisTrp-136
 222-ValAsnThrIleLeuAsnGlyIleAlaTyr-231
 274-AlaLysLeuSerHisLeuTyrArgIleThrGluAlaValGlyArgTrpSerMetIleAspIlePheVal
 Ile-298

Antigenic Index - Jameson-Wolf
 65-IleArgLysGlnAla-69
 81-ValArgLeuArgGln-85
 107-AlaGluValArgPhe-111
 143-ArgLeuThrGlyAspAsnAlaValGlnThrAlaSerGluGlyLysThrCysCysSer-161
 165-TyrPheArgAspSerAlaGluSerProCysGly-175
 180-GluIleTyrArgArgProLysSerLeuSer-190
 215-SerAsnProAlaAlaThr-220
 234-AspGluGlyAspArgLeu-239
 272-ThrGlyAlaLysLeu-277
 339-LeuLeuTrpAspLysArgAlaSerAspGlyIleAla-350
 352-AsnGluThrGluLysHisAsp-358

Hydrophilic Regions - Hopp-Woods

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81-ValArgLeuArgGln-85
 107-AlaGluValArgPhe-111
 152-ThrAlaSerGluGlyLysThrCysCys-160
 168-AspSerAlaGluSerPro-173
 180-GluLeuTyrArgArgProLysSerLeuSer-190
 234-AspGluGlyAspArgLeu-239
 273-GlyAlaLysLysLeu-277
 339-LeuLeuTrpAspLysArgAlaSerAsp-347
 352-AsnGluThrGluLysHisAsp-358

a154**AMPHI Regions - AMPHI**

122-GlyValThrGlyLeuGlyThrLeuLeu-130
 152-GlnAspIleProProValThr-158
 262-ThrLysAsnSerLysAsnValLysSer-270
 298-PhelysGlnSerVal-302
 360-SerLysGluHisTrpLysGlnGlnPheGlnThrAlaLeuAsnLysGlyLeuThrAla-378
 389-SerLysMetIleGluLeuAsnAsp-396
 429-LysLeuAlaAspLeuAspLysPheAspLysLeuPro-441
 446-ValIleGluLeuAsnGly-451
 467-LeuSerSerIleAspLysLeuValGlyLysProGlnThrGlnAsnIleProAsnGluLeuAsnGlnThrLeu
 LysGluLeuArgThrThr-496
 506-IleTyrGlyAspValGlnAsnThrLeuGlnSerLeuAspLysThrLeuLysAspValGlnProValIleAsn
 ThrLeuLysGluLys-534

Antigenic Index - Jameson-Wolf

1-MetThrAspAsnSerProProProAsnGlyHisAlaGlnAlaArgValArgLysAsnAsnThr-21
 43-LysGluIleArgAsnArgGlyProVal-51
 57-AspSerAlaGluGlyIleGluValAsnAsnThr-67
 75-AspValGlyArgValThrArgIleLysLeuArgAspAspGlnLysGlyValGlu-92
 100-AspValSerGlyLeuIleArgSerAspThrGln-110
 114-ValLysProArgIleAspGlnSerGly-122
 138-ThrProGlyLysSerAspGluAlaLysAspValPheGln-150
 169-LeuIleGlyLysAsnAspArgIleLeuAsn-178
 196-AlaHisPheAspProSerAspGlnSer-204
 212-GlnSerProAsnAspLysLeuIle-219
 228-GluSerGlyIleAsnIleGluThrThrGlySerGlyIleLysLeuAsnSer-244
 256-SerPheAspSerProLysThrLysAsnSerLysAsnValLysSerGluAspSer-273

 275-ThrLeuTyrAspSerArgSerGluValAlaAsnLeuProAspAspArgSerLeu-292
 300-GlnSerValArgGlyLeu-305
 311-ValGluTyrLysGlyLeuAsn-317
 325-ProTyrPheAspArgAsnAspSer-332
 345-IleArgIleGluProSerArgLeuGluIleAsnAlaAspGluGlnSerLysGluHisTrpLysGlnGlnPhe
 -368
 371-AlaLeuAsnLysGlyLeu-376
 386-LeuThrGlySerLysMetIleGluLeuAsnAspGlnProSerAlaSerProLysLeuArgPro-406

 419-GlnGlyGlyGlyLeuAspAspLeuGlnValLysLeu-430
 432-AspLeuLeuAspLysPheAspLysLeuProLeuAspLysThrValAla-447
 450-AsnGlySerLeuAlaGluLeuLysSerThrLeuLysSerAlaAsn-464
 469-SerIleAspLysLeuValGlyLysProGlnThrGlnAsnIleProAsnGluLeuAsnGlnThrLeuLysGlu
 LeuArgThrThr-496
 500-ValSerProGlnSer-504
 516-SerLeuAspLysThrLeuLysAspValGln-525
 530-ThrLeuLysGluLysProAsn-536

541-AsnSerSerSerLysAspProIleProLysGlySerArg-553

Hydrophilic Regions - Hopp-Woods

1-MetThrAspAsnSerProProPro-8
 12-AlaGlnIlaArgValArgLysAsnAsn-20
 43-LysGluIleArgAsnArgGly-49
 57-AspSerAlaGluGlyIleGlu-63
 75-AspValGlyArgValThrArgIleLysLeuArgAspAspGlnLysGlyValGlu-92
 105-IleArgSerAspThr-109
 116-ProArgIleAspGln-120
 140-GlyLysSerAspGluAlaLysAspValPheGln-150
 171-GlyLysAsnAspArgIleLeu-177
 196-AlaHisPheAspProSerAspGln-203
 214-ProAsnAspLysLeuIle-219
 258-AspSerProLysThrLysAsnSerLysAsnValLysSerGluAspSer-273
 278-AspSerArgSerGluVal-283
 285-AsnLeuProAspAspArgSer-291
 311-ValGluTyrLysGly-315
 328-AspArgAsnAspSer-332
 345-IleArgIleGluProSerArgLeuGluIleAsnAlaAspGluGlnSerLysGluHisTrpLys-365
 390-LysMetIleGluLeuAsnAspGlnProSerAlaSerProLysLeuArgPro-406
 421-GlyGlyLeuAspAspLeuGlnValLysLeu-430
 432-AspLeuLeuAspLysPheAspLysLeuProLeuAspLysThrValAla-447
 454-AlaGluLeuLysSerThrLeuLysSerAlaAsn-464
 469-SerIleAspLysLeuValGly-475
 482-IleProAsnGluLeu-486
 488-GlnThrLeuLysGluLeuArgThr-495
 516-SerLeuAspLysThrLeuLysAspValGln-525
 530-ThrLeuLysGluLysProAsn-536
 543-SerSerLysAspProIleProLysGlySerArg-553

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AMPHI Regions - AMPHI

28-LysLeuGlyPheGlu-32
 42-AlaAlaSerLeuAsp-46
 105-LeuArgAlaLysLysVal-110
 118-ValProArgIleSerArgAlaGlnAlaLeuAspXxxLeuSerXxxMetAlaAsnIleSerGlyTyrArgAlaValIleGluAlaAlaAsnAlaPheGlyArgXxxPheThrGlyGlnIleThrAlaAlaGly-161
 175-ValAlaGlyLeuAlaAlaIleGlyThrAlaAsnSerLeuGlyAlaValValArgValPhe-194
 201-AlaGluGlnLeuGluSerMetGlyGly-209
 225-AspGlyTyrAlaLysValMet-231
 264-AlaProLysXxxXxxXxxLysGluMetValGluSerMetLys-277
 281-VailleValAspLeu-285
 307-GlyValLysIleIleGlyTyrThrAspMetAlaAsnArgLeuAlaGlyGln-323
 330-ThrAsnLeuValAsnLeuThrLysLeuLeuSer-340
 404-LysLeuAlaProAlaXxxIle-410
 428-AsnHisPheIleVal-432
 451-LeuHisThrProLeuMetSerValThrAsnAlaIleSerGlyIleIle-466

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469-GlyAlaLeuLeuGln-473
 478-AsnGlyPheValSerLeuLeuSerPheValAla-488
 494-IleAsnIlePheGlyGly-499

Antigenic Index - Jameson-Wolf

4-GlyIleProArgGluSerLeuSerGlyGluThrArgVal-16
 44-SerLeuAspAspAlaAla-49
 72-ValAsnAlaProSerGluAspGluLeuProLeuLeuLysGluGlyGln-87
 94-TrpProArgGlnAsnGluAlaLeu-101
 105-LeuArgAlaLysLysValAsn-111
 117-MetValProArgIleSerArg-123
 159-AlaAlaGlyLysValProProAla-166
 202-GluGlnLeuGluSerMetGlyGlyLys-210
 215-AspPheProGlnLysSerGlyGlyAspGlyTyrAlaLysValMetSer-232
 242-LeuPheAlaGluGlnAlaLysGluValAsp-251
 259-IleProGlyLysProAlaProLysXxxXxxXxxLysGluMetValGluSerMetLysProGlySer-280
 290-GlyGlyAsnCysGluLeuThrLysGlnGlyGlu-300
 320-LeuAlaGlyGlnSerSer-325
 338-LeuLeuSerProAsnLysAspGlyGluIle-347
 349-LeuAspPheGluAspValIle-355
 360-ThrValThrArgAspGlyGluIleThrPhePro-370
 378-AlaGlnProGlnGlnThrProSerGluLysAlaAlaProAlaAlaLysProGluProLysPro-398
 509-MetPheArgLysGly-513

Hydrophilic Regions - Hopp-Woods

4-GlyIleProArgGluSerLeuSerGlyGluThrArgVal-16
 44-SerLeuAspAspAlaAla-49
 74-AlaProSerGluAspGluLeuProLeuLeuLysGluGlyGln-87
 96-ArgGlnAsnGluAlaLeu-101
 105-LeuArgAlaLysLysValAsn-111
 117-MetValProArgIleSerArg-123
 202-GluGlnLeuGluSerMetGly-208
 215-AspPheProGlnGluSerGlyGlySerGlyAspGlyTyrAla-228
 242-LeuPheAlaGluGlnAlaLysGluValAsp-251
 260-ProGlyLysProAlaProLysXxxXxxXxxLysGluMetValGluSerMetLysPro-278
 291-GlyAsnCysGluLeuThrLysGlnGlyGlu-300
 340-SerProAsnLysAspGlyGluIle-347
 349-LeuAspPheGluAspValIle-355
 360-ThrValThrArgAspGlyGluIle-367
 382-GlnThrProSerGluLysAlaAlaProAlaAlaLysProGluProLysPro-398
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AMPHI Regions - AMPHI
 56-AsnGlyPheGluAlaPheAlaProPhe-64
 80-AlaThrValAsnThr-84

Antigenic Index - Jameson-Wolf

21-TyrAlaLysLysAlaGlyGlyPheArgPheLysAspAsnHisAsnProArgAspPheLeuAlaArgThrGlnGlyThrAlaAlaArgAlaHisAlaAlaGlnGlnAsnGlyPheGlu-59
 73-AlaThrGlyAsnAlaGlyGln-79
 103-AspLysAlaAlaIle-107

Hydrophilic Regions - Hopp-Woods

21-TyrAlaLysLysAlaGlyGlyPheArgPheLysAspAsnHisAsnProArgAspPheLeuAla-41
 43-ThrGlnGlyThrAlaAlaArgAlaHisAla-52
 103-AspLysAlaAlaIle-107

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AMPHI Regions - AMPHI

10-ArgArgGluLeuArgArgAla-16
 32-IleAsnArgLeuLeuLysArgTyrIleLysArgGly-43
 61-PheValArgAlaAlaGln-66
 137-LeuGlyGlnAlaGlyGly-142
 167-GlnPheValAspArgLeuProArgGluProHisAspLeuLeuAspGly-183

Antigenic Index - Jameson-Wolf

1-MetArgAsnGluGluLysHisAlaLeuArgArgGluLeuArgArgAlaArgGlnMetGlyHisGlnGlyArgLeuAlaAla-28
 34-ArgLeuLeuLysArgTyrIleLysArgGlyArgLysIle-46
 51-ProMetGlyLysGluLeuArgLeuAspGlyPheVal-62
 64-AlaAlaGlnLysArgGlyAlaLysLeu-72
 77-IleGluProArgSerArgArgMetTrp-85
 88-ProTyrProGluSerGlyMetGluArgGluArgIleArgGlyArgAlaLysLeuAsnVal-107
 110-PheAlaGlyArgLysIleArgVal-117
 129-GlyIleAspArgGluGlyTyrArgLeuGlyGln-139
 153-TyrArgLeuGlnAla-157
 168-PheValAspArgLeuProArgGluProHisAspLeuLeu-181

Hydrophilic Regions - Hopp-Woods

1-MetArgAsnGluGluLysHisAlaLeuArgArgGluLeuArgArgAlaArgGlnMet-20
 34-ArgLeuLeuLysArgTyrIleLysArgGlyArgLysIle-46
 54-LysGluLeuArgLeu-58
 64-AlaAlaGlnLysArgGlyAla-70
 77-IleGluProArgSerArgArg-83
 92-SerGlyMetGluArgGluArgIleArgGlyArgAlaLysLeu-105
 111-AlaGlyArgLysIleArgVal-117
 129-GlyIleAspArgGluGlyTyrArg-136
 153-TyrArgLeuGlnAla-157
 170-AspArgLeuProArgGluProHisAspLeuLeu-180

a158

AMPHI Regions - AMPHI

20-PheSerArgAlaAlaGlnLeu-27
 33-AlaValSerArgIleValLysArgLeuGlu-42
 46-GlyValAsnLeuLeuAsnArgThr-53
 63-GlyAlaGlnTyrPheArgArgAlaGlnArgIleLeuGlnGlu-76
 85-LeuAlaValHisGluIleProGln-92
 166-ValIleAlaSerPro-170
 178-ThrProGlnSerThrGluLeu-185
 188-HisGlnCysLeuGlyPheThrGluProGlySerLeuAsnThrTrpAlaVal-204

Antigenic Index - Jameson-Wolf

1-MetLysThrAsnSerGluGluLeu-8
 16-GluSerGlySerPheSerArgAlaAlaGlu-25
 36-ArgIleValLysArgLeuGluGluLysLeuGly-46
 49-LeuLeuAsnArgThrThrArgGlnLeuSerLeuThrGluGluGlyAlaGlnTyrPheArgArgAlaGlnArgIleLeuGln-75
 78-AlaAlaAlaGluThrGluMet-84
 90-IleProGlnGlyValLeuArgValAspSer-99
 114-LysPheAsnGluArgTyrProhisIleArg-123
 136-IleGluArgLysValAspIle-142
 144-LeuArgAlaGlyGluLeuAspAspSerGlyLeuArgAla-156
 158-HisLeuPheAspSerArgPheArgVal-166

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168-AlaSerProGluTyrLeuAlaLysHisGlyThrProGlnSerThrGluGluLeuAla-186
 192-GlyPheThrGluProGlySerLeuAsn-200
 207-AlaGlnGlyAsnProTyrLysIle-214
 216-ProHisPheThrAlaSerSerGlyGluIleLeu-226
 229-LeuCysLeuSerGlyCysGly-235
 243-LeuValaspAsnAspIleAlaGluGlyLysLeu-253
 258-AlaGluGlnThrSerAsnLysThrHisProPhe-268
 273-TyrSerAspLysAlaValAsnLeu-280
 292-GluLeuGlyAsnAsnLeuCysGly-299

Hydrophilic Regions - Hopp-Woods

1-MetLysThrAsnSerGluGluLeu-8
 19-SerPheSerArgAlaAlaGlu-25
 36-ArgIleValLysArgLeuGluGluLysLeuGly-46
 58-SerLeuThrGluGluGlyAlaGlnTyrPheArgArgAlaGlnArgIleLeuGln-75
 78-AlaAlaAlaGluThrGluMet-84
 95-LeuArgValAspSer-99
 114-LysPheAsnGluArgTyrPro-120
 136-IleGluArgLysValAspIle-142
 144-LeuArgAlaGlyGluLeuAspAspSerGlyLeuArgAla-156
 162-SerArgPheArgVal-166
 180-GlnSerThrGluGluLeuAla-186
 246-AsnAspIleAlaGluGlyLysLeu-253
 260-GlnThrSerAsnLysThrHis-266
 276-LysAlaValAsnLeu-280
a160
AMPHI Regions - AMPHI
 6-LysLeuValaspPheAlaGlnLeuThrGly-15
 72-GlyLeuGlyHisVal-76
 121-AlaAspLeuMetAsnGlyLeuProGluThr-130
 157-GlyThrValSerMetValAsnAlaLeuSerSer-167
 186-LeuSerGlyValLeuLysGlyTrpGlnAspLysArg-197
 200-HistLeuIleGlnLysValIleAspLysProGlu-210
 218-MetValAlaAlaAlaAsn-223
 229-LeuMetArgArgPhe-233
 242-HisAlaPheValAsnHisIleArg-249
 279-PheGlyLysAlaPheLys-284

Antigenic Index - Jameson-Wolf

2-AspIleLeuAspLysLeuVal-8
 28-SerValArgHisGluThrLeuGlnArgGluGlyLeu-39
 51-CysIleAspGlyGluThrSerProArgProValSerThrGlyAsp-65
 77-LeuSerHisAspGlyLysCysGlyGluSerLeuGlnProAspMetArgGlnHisGly-95
 101-GlnCysGlyAsnGlyGlnAspMet-108
 115-PheArgTyrAspThrHisAla-121
 123-LeuMetAsnGlyLeu-127
 149-LeuGluSerLysLysProLeu-155
 178-LeuGluGlnAspLysAspValGluLeu-186
 192-GlyTrpGlnAspLysArgLeuGly-199
 205-ValIleAspLysProGluAspGluTrpAsnValAspLysMetVal-219
 228-GlnLeuMetArgArgPheLysSerArgValGlyLeuSerProHis-242
 255-LeuLeuLeuLysLysAsnProAspSerVal-264
 274-GlnSerGluThrHisPhe-279
 281-LysAlaPheLysArg-285
 290-SerProGlyGlnTyrArgLysGluGlyGlyGlnLys-301

Hydrophilic Regions - Hopp-Woods

2-AspIleLeuAspLysIleuVal-8
 29-ValArgHisGluThrLeuGlnArgGluGlyLeu-39
 53-AspGlyGluThrSerProArgProValSer-62
 79-HisAspGlyLysCysGlyGluSerLeuGlnProAspMetArgGln-93
 101-GlnCysGlyAsnGlyGlnAsp-107
 149-LeuGluSerLysLysProLeu-155
 178-LeuGluGlnAspLysAspValGluLeu-186
 193-TrpGlnAspLysArgLeuGly-199
 205-ValIleAspLysProGluAspGluTrpAsnVal-215
 228-GlnLeuMetArgArgPheLysSerArgValGly-238
 255-LeuLeuLeuLysLysAsnProAspSer-263
 281-LysAlaPheLysArg-285
 293-GlnTyrArgLysGluGlyGlyGlnLys-301
 a163

AMPHI Regions - AMPHI

60-SerSerLeuGlyAsnIle-65
 67-LeuGlyArgAspGluAsp-72
 76-PheGlyPheLeuSerTrpLeuAlaMetLeuPhe-86
 100-AlaGluProLeuMetHisTyrPheSerAspIleThrAla-112
 170-IleSerGlyArgPheGlyAspAlaIleAspIleMetAlaLeuLeuAlaThrPhePheGlyIleIleThrThr-193
 227-MetSerLeuAlaValValSerAlaIleSerGlyValGlyLysGlyValLysValLeuSer-246
 272-AlaPheGlyAspAsnIleGlyAsnTyrLeuGlyAsnLeuValArg-286
 313-TrpCysSerTrpAlaProPheValGlyLeuPheIleAla-325
 346-LeuPheGlyValLeuTrpPhe-352
 367-AlaGlyGlyValLeuGluLysMetThrSerSer-377
 380-ThrLeuLeuPheLysPhePheAsnTyrLeuProLeuProGluLeuThrSerIleIleValSerLeuLeu-401
 438-TrpGlyValLeuMetSerIle-444
 454-GlyLeuGlyAsnLeuGlnSerMetThrLeu-463
 520-GluGlnAspIleLeuLysPheLeuLysHisThrAla-531
 535-MetHisGluLeuGlnArgGluLeu-542
 574-AspPheMetTyrGlyIle-579
 583-GlyGlnAspValSerAspGlnLeu-590
 630-AlaAspIleLeuLysAsnTyr-636

Antigenic Index - Jameson-Wolf

29-AspArgAlaLysGlu-33
 65-IleArgLeuGlyArgAspGluAspValPro-74
 111-ThrAlaGlyThrProGluHisArgGlnGln-120
 166-LeuLysGluLysIleSerGlyArgPheGlyAspAlaIleAsp-179
 200-GlnLeuGlyAlaGlyLeu-205
 237-GlyValGlyLysGlyValLysVal-244
 293-AlaTyrGluArgGluHisLysProTrpPhe-302
 326-ArgIleSerLysGlyArgThrIleArg-334
 370-ValLeuGluLysMetThrSerSerProGluThr-380
 409-ThrSerAlaAspSerGlyIle-415
 421-IleThrSerArgAspLysGlyLeuSerAlaProArgTrp-433
 451-ArgSerGlyGlyLeuGlyAsn-457
 484-LeuSerAlaAspLysTyrPheGluThrArgValAsnProThrSer-499
 503-ThrGlyGlyLysTrpLysGluArgLeu-511
 516-SerGlnThrGlnGluGlnAspIle-523
 537-GluLeuGlnArgGluLeuSerGluGluTyrGlyLeu-548
 550-ValArgValAspLysMetPheHisGlnAspGluProAla-562

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566-VallleArgLysGluThrMetArg-573
 581-SerValGlyGlnAspValSerAspGlnLeuIleAsnAspGlyLysLeuProHisIleArgHisGlnThrThr
 TyrLysProTyr-608
 612-PheAspGlyArgValGlyTyr-618
 622-TyrMetAsnLysAspGluLeuIle-629
 632-IleLeuLysAsnTyrGlu-637
 654-GluGlnValGluLeuAlaGlu-660

Hydrophilic Regions - Hopp-Woods

29-AspArgAlaLysGlu-33
 66-ArgLeuGlyArgAspGluAspValPro-74
 114-ThrProGluHisArgGlnGln-120
 166-LeuLysGluLysIleSerGlyArgPheGlyAsp-176
 238-ValGlyLysGlyVallysVal-244
 293-AlaTyrGluArgGluHisLysPro-300
 327-IleSerLysGlyArgThrIleArg-334
 370-VallLeuGluLysMetThrSerSerPro-378
 422-ThrSerArgAspLysGlyLeuSer-429
 484-LeuSerAlaAspLysLysTyrPheGlu-492
 506-LysTrpLysGluArgLeu-511
 517-GlnThrGlnGluGlnAspIle-523
 537-GluLeuGlnArgGluLeuSerGluGluTyrGlyLeu-548
 550-ValArgValAspLysMetPheHisGlnAspGluProAla-562
 566-VallleArgLysGluThrMetArg-573
 581-SerValGlyGlnAspValSerAsp-588
 590-LeuIleAsnAspGlyLysLeuProHis-598
 622-TyrMetAsnLysAspGluLeuIle-629
 654-GluGlnValGluLeuAlaGlu-660

a164

AMPHI Regions - AMPHI

6-AlaAsnPheTyrGluMetLeuThrAlaAla-15
 33-AlaTyrArgAlaLeuLysGlnGlu-40
 75-AlaValSerAlaIleGlyAlaVal-82
 97-TyrIleLeuAsnAspCys-102
 113-LeuSerLysGluLeuIlaGlyLeuLysAla-122
 148-PheGluAspValArgArgPheProGlu-156
 160-LeuGlyArgGlnProArgIleAsnAspLeuAlaHis-171
 189-TyrAlaAsnLeuPheAlaAsnLeuAsnGlyIleGluArgIlePheLys-204
 264-ValProAlaIleTyrThr-269
 282-TrpPheAsnArgIle-286
 311-AlaLysLeuGluGlyTyrGlyLeuSer-320
 362-GluValGlyLeuIle-367
 374-MetArgGlyTyrLeuAsn-379
 387-ThrIleValAsnGlyTrpLeuLys-394
 424-ValTyrProArgGluIleGluGluGlu-432
 459-PheValGlnLeuLysGluGlyMet-466
 472-GluIleArgArgHisLeuArgThrVal-480
 484-PhelysIleProLysGln-489
 499-AsnAlaThrGlyLysValLeuLysArgValLeuLysGluGlnPheAspGlyAsn-516

Antigenic Index - Jameson-Wolf

1-MetAsnArgThrTyr-5
 15-AlaCysArgLysAsnGlyAsnGly-22
 26-PheAspGlyLysGluLysThrAlaTyrArgAlaLeuLysGlnGluAlaGluAla-43
 63-ValSerAsnSerThrGlu-68

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88-ThrPheLeuLysAsnSerGlu-94
 100-AsnAspCysLysAla-104
 112-GlyLeuSerLysGluLeuAlaGly-119
 121-LysAlaGlnThrProValGlu-127
 133-GlyGlnSerArgProAspGlyGluMetAlaGluGlyAspAlaPhePheGluAspValArgArgPheProGlu
 LysProAspLeuGlyArgGlnProArgIleAsnAsp-168
 176-SerGlyThrThrGlyHisProLysGlyAla-185
 196-LeuAsnGlyIleGluArgIlePheLysIleSerLysArgAspArgPhe-211
 270-AlaMetSerLysThrLysIle-276
 291-SerGlyGlyAlaProLeuAla-297
 304-PheLysAlaLysPheProArg-310
 317-TyrGlyLeuSerGluAlaSer-323
 330-ThrProGluArgGlnLysAlaArgSer-338
 343-LeuProGlyLeuGluValLysAlaValAspGluGluLeuValGluValProArgGlyGluValGly-364
 367-IleValArgGlyGlySerValMet-374
 382-AlaAlaThrAspGluThrIle-388
 393-LeuLysThrGlyAsp-397
 400-ThrIleAspGluAspGly-405
 410-ValAspArgLysLysAspLeuIleSerLysGlyGlnAsnValTyrProArgGluIleGluGluGluIle
 TyrLys-435
 446-GlyValLysAspArgTyrAlaAspGluGluIle-456
 462-LeuLysGluGlyMetAspLeuGlyGluAsnGluIleArgArgHisLeuArg-478
 490-IleHisPheLysAspGlyLeuProArgAsnAlaThrGlyLysValLeuLysArgValLeuLysGluGlnPhe
 AspGlyAsnLys-517

Hydrophilic Regions - Hopp-Woods

15-AlaCysArgLysAsnGlyAsn-21
 26-PheAspGlyLysGluLysThrAlaTyrArgAlaLeuLysGlnGluAlaGluAla-43
 112-GlyLeuSerLysGluLeuAlaGly-119
 135-SerArgProAspGlyGluMetAlaGluGlyAspAlaPhePheGluAspValArgArgPheProGluLysPro
 AspLeuGlyArgGlnProArgIleAsnAsp-168
 198-GlyIleGluArgIlePheLysIleSerLysArgAspArgPhe-211
 304-PheLysAlaLysPheProArg-310
 330-ThrProGluArgGlnLysAlaArgSer-338
 346-LeuGluValLysAlaValAspGluGluLeuValGluValProArgGlyGluValGly-364
 382-AlaAlaThrAspGluThrIle-388
 400-ThrIleAspGluAspGly-405
 410-ValAspArgLysLysAspLeuIleIle-418
 425-TyrProArgGluIleGluGluGluIleTyrLys-435
 446-GlyValLysAspArgTyrAlaAspGluGluIle-456
 462-LeuLysGluGlyMetAspLeuGlyGluAsnGluIleArgArgHisLeuArg-478
 494-AspGlyLeuProArgAsnAlaThr-501
 503-LysValLeuLysArgValLeuLysGluGlnPheAspGlyAsnLys-517
a165-1

AMPHI Regions - AMPHI

17-AlaThrLeuGlyValLeuLeuLysGluLeu-26
 33-ThrLeuIleGluArgLeuGluAsp-40
 72-IleIleAspProAlaArgAlaLeuAsnIleAla-82
 90-GlnPheTrpAlaThr-94
 108-AsnAlaValProHis-112
 125-LeuGlnLysArgArgTyrAspAlaPheLysThrGlnLysLeuPheGluAsnMet-141
 182-ArgLeuThrArgGlnMetValLysTyrLeuGlnGly-193
 198-ThrGluPheAsnArgHisValGluAspIleLysArgGlu-210
 364-LysThrLysGluGlu-368
 371-AlaSerLeuLeuGluTyrTyr-377

456-ArgLeuLysGluLeu-460

Antigenic Index - Jameson-Wolf

1-MetAlaGluAlaThrAsp-6
 24-LysGluLeuGluProSerTrp-30
 36-GluArgLeuGluAspValAlaLeuGluSerSerAsnAlaTrpAsnAsnAlaGlyThrGly-55
 97-AlaGluGlyLysLeuGluAspAsnSer-105
 117-MetAsnGluAspHisCysSerTyrLeuGlnLysArgTyrAspAlaPheLysThrGlnLysLeuPheGlu-13
 9
 141-MetGluPheSerThrAspArgAsnIleSerAsp-152
 157-MetMetArgGlyArgAspGluAsnGlnPro-166
 169-AlaAsnTyrSerAlaGluGlyThrAspValAspPheGlyArgLeuThrArgGlnMet-187
 191-LeuGlnGlyLysGlyValLysThrGluPheAsnArgHisValGluAspIleLysArgGluSerAspGly-21
 3
 219-ThrAlaAspThrArgAsnProAspGlyGlnLeu-229
 249-GlnLysSerGlyIleProGluGlyLysGlyTyrGly-260
 269-PheArgAsnSerAsnProGluThrAlaGluGlnHisAsn-281
 300-LeuAspThrArgAsnValAspGlyLysArgHisLeu-311
 322-AsnPheLeuLysGlnGlySerLeuMet-330
 361-GluLeuArgLysThrLysGluGluArgPhe-370
 377-TyrProGluAlaAsnProAspAspTrpGlu-386
 395-GlnIleIleLysLysAspSerGluLysGlyGly-405
 415-AlaHisAlaAspGlySer-420
 428-SerProGlyAlaSerThr-433
 446-PheProGluArgThrProSerTrpGluGlyArgLeuLysGluLeuValProGlyTyr-464
 467-LysLeuAsnGluAsnProGluArgAlaAspGlu-477

Hydrophilic Regions - Hopp-Woods

1-MetAlaGluAlaThrAsp-6
 24-LysGluLeuGluPro-28
 36-GluArgLeuGluAspValAlaLeuGluSer-45
 97-AlaGluGlyLysLeuGluAspAsnSer-105
 117-MetAsnGluAspHisCys-122
 125-LeuGlnLysArgTyrAspAlaPheLysThr-134
 141-MetGluPheSerThrAspArgAsnIleSerAsp-152
 158-MetArgGlyArgAspGluAsnGlnPro-166
 172-SerAlaGluGlyThrAspValAspPhe-180
 182-ArgLeuThrArgGlnMet-187
 194-LysGlyValLysThrGluPheAsnArgHisValGluAspIleLysArgGluSerAspGly-213
 219-ThrAlaAspThrArgAsnProAspGly-227
 252-GlyIleProGluGlyLysGly-258
 272-SerAsnProGluThrAlaGluGlnHisAsn-281
 300-LeuAspThrArgAsnValAspGlyLysArg-309
 361-GluLeuArgLysThrLysGluGluArgPhe-370
 380-AlaAsnProAspAspTrpGlu-386
 395-GlnIleIleLysLysAspSerGluLysGlyGly-405
 446-PheProGluArgThrProSerTrpGluGlyArgLeuLysGluLeuVal-461
 467-LysLeuAsnGluAsnProGluArgAlaAspGlu-477
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AMPHI Regions - AMPHI

6-ProGluGlnAsnValValArgLeuThrGlyLysHisProAsnAspLeuGluAlaValValGlyLys-27
 46-CysHisThrLeuPheAlaLysLeuValGlyAsnIleAlaGluAspGlyGlyLys-63
 75-GlnProTyrGlnAla-79

Antigenic Index - Jameson-Wolf

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1-ProLeuLysGlyLeuProGluGlnAsnVal-10
 13-LeuThrGlyLysHisProAsnAspLeuGluAlaValVal-25
 27-LysCysMetGluThrAspGlyLysGlyAlaProSerGly-39
 57-IleAlaGluAspGlyGlyLysLeuThr-65
 77-TyrGlnAlaGlyLysSerGlyTyr-84
 96-IleAspSerGluGly-100
 103-TyrPheArgArgArgHisTyr-109

Hydrophilic Regions - Hopp-Woods

13-LeuThrGlyLysHisProAsnAspLeuGluAlaValVal-25
 27-LysCysMetGluThrAspGlyLysGlyAla-36
 57-IleAlaGluAspGlyGlyLysLeu-64
 78-GlnAlaGlyLysSerGly-83
 96-IleAspSerGluGly-100
 104-PheArgArgArgHisTyr-109

a206**AMPHI Regions - AMPHI**

32-ProLysGlnThrValArgGlnIleGlnAlaVal-42
 44-IleSerHisIleAspArgThrGlnGly-52
 81-CysSerGlyMetIleGln-86
 99-ArgThrAlaArgAspMet-104
 150-SerGlyLysThrIleLysThrGlu-157

Antigenic Index - Jameson-Wolf

2-PheProProAspLysThrLeu-8
 21-GlyThrThrSerGlyLysHisArgGlnProLysProLysGlnThrValArg-37
 45-SerHisIleAspArgThrGlnGlySerGln-54
 66-ThrProTyrLysTrpGlyGlySerSerThr-75
 96-LysLeuProArgThrAlaArgAspMetAlaAlaAlaSerArgLysIleProAspSerArgLeuLysAlaGly-
 119
 126-ThrGlyGlyAlaHisArgTyrSer-133
 148-ProSerSerGlyLysThrIleLysThrGluLysLeuSer-160

Hydrophilic Regions - Hopp-Woods

23-ThrSerGlyLysHisArgGlnProLysProLysGlnThrVal-36
 45-SerHisIleAspArgThrGlnGlySerGln-54
 96-LysLeuProArgThrAlaArgAspMetAlaAlaAlaSerArgLysIleProAspSerArgLeuLysAlaGly-
 119
 149-SerSerGlyLysThrIleLysThrGluLysLeuSer-160

a211**AMPHI Regions - AMPHI**

18-ValGlyAsnGlyValAspGluPheGlyArgGlyAla-29
 57-GlnPheGluArgAla-61
 98-IleGluGlyPheAspLysIleAsnProAla-107

Antigenic Index - Jameson-Wolf

8-AsnGlnLeuGlyGlyArgAsnGlyThrAlaValGlyAsnGlyValAspGluPheGlyArgGlyAlaAspAsnGlnValGluPheLeuGlu-37
 44-GlyAlaSerGlyArgAlaAla-50
 73-GlyGluAspAspValVal-78
 100-GlyPheAspLysIleAsnProAlaVal-108
 141-ArgTyrHisProLysLeuHisAspGlyAsnGlnAsnGlyLysArgHisGlyLysLeuHisHisArgAla-16
 3
 169-CysGlnSerAlaGly-173

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Hydrophilic Regions - Hopp-Woods

10-LeuGlyGlyArgAsnGlyThr-16
21-GlyValAspGluPheGlyArgGlyAlaAspAsnGlnValGluPheLeuGlu-37
73-GlyGluAspAspValVal-78
100-GlyPheAspLysIleAsn-105
142-TyrHisProLysLeuHisAspGlyAsnGlnAsnGlyLysArgHisGlyLysLeuHisHis-161
a212

AMPHI Regions - AMPHI

6-TrpAsnGlyIleProAspIleArgThr-14

16-AspGlnThrIleArgLysHisAlaHis-24
40-PheGlnThrAlaGlnAsp-45
63-CysLeuGlnPheAspSerIleAsnLeuIleGluHisIle-75
89-ThrArgArgLeuHisGluHis-95
199-ArgLeuLeuGlyHis-203
238-HisAsnHisLeuTyrArgSerIleThrGlnAlaGluAlaGluLysIle-253
262-TyrAlaGluProLeuCysGlyLeu-269
397-TrpAsnGluAlaGluGluAla-403
439-AspSerProAspHis-443

445-ProLeuValGlyAlaLeuGlyAspIleAlaAlaMetGlnGlnThr-459
481-AlaTyrAlaAsnThrAlaHisGlyThrArgGlyLeu-492
506-IleLeuGlyLeuPro-510

512-ProLeuSerLysArgLeuArg-518

Antigenic Index - Jameson-Wolf

10-ProAspIleArgThrLeuAspGlnThrIleArgLysHisAlaHisProLeu-26
33-ProAspAsnGlnIleProAsnPhe-40

42-ThrAlaGlnAspAlaSerAspAlaGluCysArgLeuLysHisArgLeuAspGln-59
85-ProProSerArgThrArgArgLeuHisGlu-94
105-AlaIleProGlnThrGluSerLysProAspLysProTrp-117
120-LeuProGlnThrSerGluArgGlnLysProGluHis-131
158-LeuGluAlaArgLysAlaAlaGln-165
168-SerGlyAsnArgGlnGly-173
178-LysIleSerProHisAspThrGluGlnThrGlu-188
193-GlyTyrGlyTyrThrLys-198

205-LeuProGluSerGluThrTrpGlyGlyAsnGly-215
220-AsnTyrSerArgThrGluGlnGlnArgAsnHisGluLeuGlyLeu-234

236-LysHisHisAsnHisLeu-241
245-IleThrGlnAlaGluAlaGluLysIleAla-254
258-LeuAsnThrProTyrAla-263
294-LeuHisGluAspThrProLeu-300

302-AspIleSerHisAspGlyGluLysTrpIle-311
328-ThrGlyAlaAsnSerProTyrLeuPro-336
346-ArgGlnIleArgGlyGlnThrGlyLeuThrProSerThrProPheSerGluGlnLeuArg-365
376-ProSerTrpHisGly-380
391-AsnSerSerHisThrGlyTrpAsnGluAlaGluGluAlaSerAsnArgGlnAla-408
424-AsnProAsnProGlnLysHisGlnGly-432
436-IleArgCysAspSerProAspHisLeuPro-445

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464-AlaLeuAspLysAsnTyrArgIleAspAla-473

486-AlaHisGlyThrArgGlyLeuAla-493
 511-HisProLeuSerLysArgLeuArgHis-519
 522-HisProAsnArgAlaIle-527
 531-IleValArgArgLysAspLeuThrPro-539

Hydrophilic Regions - Hopp-Woods

10-ProAspIleArgThrLeuAspGlnThrIleArgLysHisAla-23
 44-GlnAspAlaSerAspAlaGluCysArgLeuLysHisArgLeuAspGln-59
 87-SerArgThrArgArgLeuHisGlu-94
 105-AlaIleProGlnThrGluSerLysProAspLys-115
 122-GlnThrSerGluArgGlnLysProGluHis-131
 158-LeuGluAlaArgLysAlaAlaGln-165
 180-SerProHisAspThrGluGlnThrGlu-188
 206-ProGluSerGluThr-210
 222-SerArgThrGluGlnGlnArgAsnHisGlu-231

246-ThrGlnAlaGluAlaGluLysIleAla-254
 294-LeuHisGluAspThrProLeu-300
 303-IleSerHisAspGlyGluLysTrpIle-311
 346-ArgGlnIleArgGly-350

398-AsnGluAlaGluGluAlaSerAsnArgGlnAla-408
 426-AsnProGlnLysHisGlnGly-432
 436-IleArgCysAspSerProAsp-442
 467-LysAsnTyrArgIleAspAla-473
 513-LeuSerLysArgLeuArgHis-519
 531-IleValArgArgLysAspLeuThrPro-539

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AMPHI Regions - AMPHI
 6-CysLysLeuPheValLeuIle-12
 69-ValThrArgGlyGlyLysGlyGlyGluSerVal-79
 88-PheSerGlnThrLeuAsp-93
 122-LysValGlnArgGlyGlyAspVal-129
 150-ThrLysSerGlyAlaLysSerAlaSerLys-159

Antigenic Index - Jameson-Wolf

23-LeuGlnSerAspSerArgGlnProIle-31
 33-IleGluAlaAspGlnGlySerLeuAspGlnAlaAsnGlnSerThrThrPheSerGlyAsn-52
 71-ArgGlyGlyLysGlyGlyGluSerValArgAlaGluGlySerProValArgPheSerGlnThrLeuAspGlyGlyLysGlyThrValArgGlyGlnAlaAsnAsn-105
 119-GlyAsnAlaLysValGlnArgGlyGlyAspValAlaGlu-131
 137-TyrAsnThrLysThrGluVal-143
 148-GlySerThrLysSerGlyAlaLysSerAlaSerLysSerGlyArgValSerVal-165
 168-GlnProSerSerThrGlnLysSerGlu-176

Hydrophilic Regions - Hopp-Woods

25-SerAspSerArgGlnProIle-31
 33-IleGluAlaAspGlnGlySerLeuAspGlnAlaAsn-44
 71-ArgGlyGlyLysGlyGlyGluSerValArgAlaGluGlySerPro-85
 92-LeuAspGlyGlyLysGlyThrValArgGlyGlnAla-103
 121-AlaLysValGlnArgGlyGlyAspValAlaGlu-131

-447-

148-GlySerThrLysSerGlyAlaLysSerAlaSerLysSerGlyArg-162

171-SerThrGlnLysSerGlu-176

a215**AMPHI Regions - AMPHI**

21-SerLeuSerAlaTrpLeuGlyArgIle-29

67-SerSerLysGlyAlaLysGlnPheProGlu-76

Antigenic Index - Jameson-Wolf

3-ValArgTrpArgTyrGly-8

28-ArgIleSerGluValGluIleGluGluValArgLeuAsnProAspGluProGlnTyrThrMetAspGlyLeuA
spGlyArgArgPheAspGluGlyTyrLeuLys-63

65-HisLeuSerSerLysGlyAlaLysGlnPheProGluSerSerAspIleHisPheAspSerProHisLeu-87

99-ValGlySerAspGluAlaValTyrHisThrGluAsnLysGlnValLeuPhe-115

123-LysThrAlaAspGlyLysArgGlnAlaGlyLysValGluAlaGluLysLeuHisValAspThrGluSerGln
TyrAlaGlnThrAspThrProVal-154

160-AlaSerHisGlyGlnAlaGlyGlyMetThrTyrAspHisLysThrGly-175

179-PheSerSerLysValLys-184

187-IleTyrAspThrLysAspMet-193

Hydrophilic Regions - Hopp-Woods

29-IleSerGluValGluIleGluGluValArgLeuAsnProAspGluProGlnTyr-46

49-AspGlyLeuAspGlyArgArgPheAspGlu-58

65-HisLeuSerSerLysGlyAlaLysGlnPheProGluSerSerAspIleHisPhe-82

59-ValGlySerAspGluAlaValTyr-106

108-ThrGluAsnLysGlnValLeu-114

123-LysThrAlaAspGlyLysArgGlnAlaGlyLysValGluAlaGluLysLeuHisValAspThrGluSerGln
TyrAla-148

170-TyrAspHisLysThr-174

187-IleTyrAspThrLysAspMet-193

a216**AMPHI Regions - AMPHI**

21-AlaGluGlyLeuArgGluIleAlaAlaAspLeu-31

62-ArgLysMetAlaAla-66

167-LeuGlyAspAlaIleAlaVal-173

203-ValAlaAspIleMetHis-208

218-LeuGlyThrProLeuLysGlu-224

244-GlyArgLeuLysGlyVal-249

253-GlyAspLeuArgArgLeuPheGlnGluCysAspAsnPheThrGlyLeuSerIle-270

274-MetHisThrHisProLysThrIleSerAla-283

292-LysValMetGlnAlaAsn-297

Antigenic Index - Jameson-Wolf

4-AlaGlyAsnGluLysTyrLeuAspTrpAlaArg-14

16-ValLeuHisThrGluAlaGluGlyLeuArgGluIleAlaAlaAspLeuAspGlu-33

45-CysLysGlyArgVal-49

53-GlyMetGlyLysSerGlyHisIleGlyArgLysMetAla-65

82-GluAlaAlaHisGlyAspLeu-88

92-ValAspAsnAspVal-96

101-SerAsnSerGlyGluSerAspGluIle-109

115-AlaLeuLysArgLysAspIle-121

127-ThrAlaArgProAspSerThrMetAlaArgHisAlaAsp-139

146-ValSerLysGluAlaCysPro-152

179-ArgAlaPheThrProAspAspPheAla-187

190-HisProAlaGlySerLeuGlyLys-197

205-AspIleMetHisLysGlyGlyLeuProAla-215

-448-

218-LeuGlyThrProLeuLysGluAlaIle-226
 229-MetSerGluLysGlyLeu-234
 239-ValThrAspGlyGlnGlyArgLeuLysGly-248
 250-PheThrAspGlyAspLeuArgArgLeuPheGlnGluCysAspAsnPheThr-266
 277-HisProLysThrIleSerAlaGluArgLeuAlaThrGluAlaLeuLys-292
 305-ThrAspAlaAspGly-309

Hydrophilic Regions - Hopp-Woods

5-GlyAsnGluLysTyrLeuAspTrpAlaArg-14
 16-ValLeuHisThrGluAlaGluGlyLeuArgGluIleAlaAlaAspLeuAspGlu-33
 45-CysLysGlyArgVal-49
 58-GlyHisIleGlyArgLysMetAla-65
 102-AsnSerGlyGluSerAspGluIle-109
 115-AlaLeuLysArgLysAspIle-121
 128-AlaArgProAspSerThrMetAlaArgHisAlaAsp-139
 146-ValSerLysGluAlaCys-151
 179-ArgAlaPheThrProAspAspPheAla-187
 220-ThrProLeuLysGluAlaIle-226
 229-MetSerGluLysGlyLeu-234
 241-AspGlyGlnGlyArgLeuLys-247
 253-GlyAspLeuArgArgLeuPheGlnGluCysAspAsn-264
 279-LysThrIleSerAlaGluArgLeuAlaThrGluAlaLeuLys-292
 305-ThrAspAlaAspGly-309
a218
AMPHI Regions - AMPHI
 9-AlaLysValValSerThrMet-15
 24-AlaMetAspGluIleHisSer-30
 78-AlaArgSerTrpTrpArgArgAsnLeuHisGlyAlaPheGlyThrTrpValSerLeuIleLeu-97
 111-TrpGlyGlyLysPheValGlnAlaTrpSerGlnPhePro-123
 176-AspGluProMetThrLeuGluThrValAspArgPheAlaArgXxxAsnArgPheGlnArgAlaLeuSerAla-199

Antigenic Index - Jameson-Wolf

13-SerThrMetProArgAsnGlnGlyTrp-21
 35-GlySerThrGlyAsp-39
 62-ValLysArgArgGlyIleLysAla-69
 71-LeuLeuProProLysGlyArgAlaArgSerTrpTrp-82
 86-HisGlyAlaPheGly-90
 123-ProAlaGlyLysTrpGlyValGluProAsnProVal-134
 143-ValLeuAsnAspGlyLysValLysGlu-151
 167-ThrValGlyLysAspGlyIleAsnProAspGluProMetThr-180
 182-GluThrValAspArgPheAlaArgXxxAsnArgPheGlnArg-195
 201-PheAlaGlnArgArgGlyArgArgMetAspPhe-211

Hydrophilic Regions - Hopp-Woods

63-LysArgArgGlyIleLys-68
 74-ProLysGlyArgAla-78
 143-ValLeuAsnAspGlyLysValLysGlu-151
 167-ThrValGlyLysAspGlyIleAsnProAspGluProMetThr-180
 182-GluThrValAspArgPheAlaArgXxxAsnArgPheGlnArg-195
 201-PheAlaGlnArgArgGlyArgArgMetAspPhe-211
a225-1

AMPHI Regions - AMPHI

23-LeuAlaAspGluLeuThrAsn-29
 37-IleLeuArgGlnPhe-41

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155-AsnAlaMetGlyLeu-159
 180-PheMetGlnHisIlePheLys-186
 215-GlyAspMetValXxPheArgThrLeuGlyGlySerArg-227
 246-ThrGlyLysAsnIle-250

Antigenic Index - Jameson-Wolf
 22-AlaLeuAlaAspGluLeuThr-28
 32-SerSerArgGluGlnIleLeu-38
 41-PheAlaGluAspGluGlnProVal-48
 52-AsnArgXxxProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-66
 71-GlyLeuAsnGluGlnProVal-77
 81-AsnArgXxxProAlaArgArgAlaGlyAsnAlaAspXxx-93
 100-GlyLeuAsnGluGlnProVal-106
 110-AsnArgValProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-124
 129-GlyLeuAsnGluGlnProVal-135
 137-ProValAsnArgAlaProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-153
 173-ThrGlyPheAspCysSerGly-179
 193-LeuProArgThrSerAlaGluGlnAlaArgMet-203
 205-ThrProValAlaArgSerGluLeuGlnProGlyAspMetValXxx-219
 222-ThrLeuGlyGlySerArgIle-228
 242-HisAlaProArgThrGlyLysAsnIleGlu-251
 254-SerLeuSerHisLysTyrTrpSerGlyLys-263
 268-ArgArgValLysLysAsnAspProSerArgPhe-278

Hydrophilic Regions - Hopp-Woods
 22-AlaLeuAlaAspGluLeuThr-28
 32-SerSerArgGluGlnIleLeu-38
 41-PheAlaGluAspGluGlnPro-47
 53-ArgXxxProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-66
 82-ArgXxxProAlaArgArgAlaGlyAsnAla-91
 112-ValProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-124
 140-ArgAlaProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-153
 195-ArgThrSerAlaGluGlnAlaArgMet-203
 207-ValAlaArgSerGluLeuGlnPro-214
 245-ArgThrGlyLysAsnIleGlu-251
 268-ArgArgValLysLysAsnAspProSerArg-277
 a226

AMPHI Regions - AMPHI
 44-LeuIleAlaTyrLeuLys-49
 61-AlaAlaGlnPheIleAspPheTrpLeu-69
 98-GlnLeuAlaGlySerValThrGlyIleValThr-108
 141-ArgSerIleGlyGlyIleProAlaIleThr-150
 157-AlaGlyLeuValGlyGlnIleAlaGlyTyrLys-167
 197-GluArgSerArgArg-201

Antigenic Index - Jameson-Wolf
 3-GluIleLeuArgGlnProSer-9
 25-ValArgThrArgThrGlyAsnIle-32
 81-TyrGlnAsnArgArgLysIle-87
 117-GlyAlaGluArgGluVal-122
 128-SerLysSerValThrAsn-133
 139-IleThrArgSerIleGlyGly-145
 167-LysMetLeuLysAsnThrVal-173
 195-SerLeuGluArgSerArgArgMetAla-203

-450-

Hydrophilic Regions - Hopp-Woods

25-ValArgThrArgThr-29
 82-GlnAsnArgArgGluIle-87
 117-GlyAlaGluArgGluVal-122
 195-SerLeuGluArgSerArgArgMetAla-203

a227

AMPHI Regions - AMPHI

36-GlyValLeuPheAlaLeuLeuGlnAla-44
 52-LeuGlnGlnLeuThrAspAlaLeu-59
 74-ValIleSerTyrLeuAspLeuIleAlaAspAspTrpPheSer-87

a228

AMPHI Regions - AMPHI

24-GluValLysGluAlaValGlnAlaValGlu-33
 40-AlaAlaSerAlaAlaGluSerAlaAlaSerAlaValGluGluAlaLysAspGlnValLysAspAla-61
 78-GluAlaValThrGluAlaAlaLysAspThrLeuAsnLysAlaAlaAspAlaThrGlnGluAlaAlaAspLysM
 etLysAspAlaAla-106

Antigenic Index - Jameson-Wolf

18-SerGlnGluAlaLysGlnGluValLysGluAlaValGln-30
 32-ValGluSerAspValLysAspThrAlaAlaSerAlaAlaGluSerAlaAlaSerAlaValGluGluAlaLysA
 spGlnValLysAspAlaAlaAlaAspAlaLysAlaSerAlaGluGluAlaValThrGluAlaLysGluAlaValTh
 rGluAlaAlaLysAspThrLeuAsnLysAlaAlaAspAlaThrGlnGluAlaAlaAspLysMetLysAspAlaAla
 Lys-107

Hydrophilic Regions - Hopp-Woods

18-SerGlnGluAlaLysGlnGluValLysGluAlaValGln-30
 32-ValGluSerAspValLysAspThrAlaAlaSerAlaAlaGluSerAlaAlaSerAlaValGluGluAlaLysA
 spGlnValLysAspAlaAlaAlaAspAlaLysAlaSerAlaGluGluAlaValThrGluAlaLysGluAlaValTh
 rGluAlaAlaLysAspThrLeuAsnLysAlaAlaAspAlaThrGlnGluAlaAlaAspLysMetLysAspAlaAla
 Lys-107

a230-1

AMPHI Regions - AMPHI

6-GluLysTyrArgThr-10
 49-AspHisSerIleAsnAsn-54
 56-IleGlnAsnGluGln-60
 73-GlnSerLeuLeuGln-77
 81-LeuLysGlnGlyAlaLys-86
 96-GlnIleLysGlnIleIle-101
 133-PheValGluGluIleArgAspGlnPhe-141
 144-GlnAsnLeuValAsnLeuVal-150
 161-AlaGluGlnLeuIleArgLeuThrGlnValAsnArgThrIleArg-175
 184-PheIleAlaGlnVal-188
 194-AspLeuGlnLysPheTyrAsn-200
 234-GluValLysAsnAlaPheGluGluArgValAlaArgLeu-246
 272-ValAlaAspPheAsnLys-277
 284-AspAspAlaPheAsnHisProSerSerLeuAlaGluAla-296
 319-SerGlyMetProGluAsnLeuIleAsnAlaVal-329
 398-LeuAsnGlyGlyLys-402
 426-GluAlaTyrAlaGluLeu-431
 444-ValArgLeuIleGlyLeuProAlaPro-452
 456-GluValGlnAlaValThrProProAspAspIleAla-467
 488-LeuLeuIleArgTyrPheAsn-494

Antigenic Index - Jameson-Wolf

4-SerIleGluLysTyrArgThrProAla-12

32-SerHisProGlyAlaAsp-37
 42-ValGlyAspGluLysIleSerAspHisSerIle-52
 56-IleGlnAsnGluGlnAlaAspGlyGlyGlyProSerArgAspAlaVal-71
 80-TyrLeuLysGlnGlyAla-85
 92-ValSerSerGluGlnIleLys-98
 101-IleValAspAspProAsnPheHisAspAlaAsnGlyLysPheAsp-115
 122-TyrLeuSerGlnArgHisMetSerGluAspGlnPheValGluGluIleArgAsp-139
 169-GlnValAsnArgThrIleArgSerHisThrPheAsnProAspGluPhe-184
 189-LysValSerGluAlaAspLeu-195
 199-TyrAsnAlaAsnLysLysAspTyrLeu-207
 223-AspPheAlaAspLysGlnThrValSerGluThrGluValLysAsnAlaPheGluGluArgValAlaArg-24
 5
 247-ProAlaAsnGluIleLysProSerPheGluGlnGluLysAlaAlaValGluAsnGluLeuLysMetLysLys
 AlaValAspAspHisAsnLysAlaLysGluLysLeuGlyAspAspAlaPheAsnHisProSerSerLeuAlaGluA
 laAlaLysAsnSerGlyLeuLysValGluThrGlnGluThrTrpSerArgGlnAspAlaGlnMetSerGlyMe
 tProGluAsn-324
 330-PheSerAspAspValLeuLysLysLysHisAsnSerGlu-342
 355-ArgAlaLysGluValArgGluGluLysThrLeuPro-366
 368-AlaGluAlaLysAspAlaValArg-375
 377-AlaTyrIleArgThrGluAlaAlaLysLeuAlaGluAsnLysAlaLysAspValLeu-395
 399-AsnGlyIleLysAlaValAsp-405
 417-GlnGlnAlaArgGlnSerMetProProGluAlaTyr-428
 432-LeuLysAlaLysProAlaAsnGlyLysProAla-442
 459-AlaValThrProProAspAspIleAla-467
 476-AlaLeuAlaGlnGlnGlnSerAlaAsnThrPhe-486
 493-PheAsnGlyLysIleLysGlnThrLysGlyAlaGlnSerValAspAsnGlyAspGlyGln-512

Hydrophilic Regions - Hopp-Woods

6-GluLysTyrArgThr-10
 42-ValGlyAspGluLysIleSerAsp-49
 56-IleGlnAsnGluGlnAlaAspGlyGlyProSerArgAspAlaVal-71
 92-ValSerSerGluGlnIleLys-98
 101-IleValAspAspProAsnPhe-107
 110-AlaAsnGlyLysPheAsp-115
 126-ArgHisMetSerGluAspGlnPheValGluGluIleArgAsp-139
 189-LysValSerGluAlaAspLeu-195
 200-AsnAlaAsnLysLysAspTyrLeu-207
 223-AspPheAlaAspLysGlnThrValSerGluThrGluValLysAsnAlaPheGluGluArgValAlaArg-24
 5
 247-ProAlaAsnGluIleLysProSerPheGluGlnGluLysAlaAlaValGluAsnGluLeuLysMetLysLys
 AlaValAlaAspPheAsnLysAlaLysGluLysLeuGlyAspAspAlaPheAsn-288
 292-SerLeuAlaGluAlaAlaLysAsnSerGlyLeuLysValGluThrGlnGlu-308
 310-TrpLeuSerArgGlnAspAlaGlnMet-318
 333-AspValLeuLysLysHisAsnSer-341
 355-ArgAlaLysGluValArgGluGluLysThrLeuPro-366
 368-AlaGluAlaLysAspAlaValArg-375
 377-AlaTyrIleArgThrGluAlaAlaLysLeuAlaGluAsnLysAlaLysAspValLeu-395
 417-GlnGlnAlaArgGlnSerMetPro-424
 432-LeuLysAlaLysProAlaAsnGly-439
 461-ThrProProAspAspIleAla-467
 496-LysIleLysGlnThrLysGlyAlaGlnSerValAspAsnGlyAspGlyGln-512
 a231-1

AMPHI Regions - AMPHI

7-IleAsnArgProTyrGlnLysProAlaGluLeu-17
 98-ArgIlePheSerPheProGln-104

-452-

209-AlaValAspAsnValLysGlyValAlaVal-218
 228-AlaValAlaGlyPheArgArgCysSerAlaAla-238
 263-LeuAlaAlaValProArgIleThrGln-271
 281-LysProPheHisAspPhePheAsnLeu-289

Antigenic Index - Jameson-Wolf

1-MetSerLysArgLysSerIleAsnArgProTyrGlnLysProAlaGlu-16
 18-ProProLeuGlnAsnAsnProProPheTyrArgLysAsnArgArgLeuAsn-34
 39-AlaAspGlyGlyCysAlaSerProGlnLysCysArgAlaArgGlyPheGln-55
 90-ProAlaValArgProArgArgLeuArg-98
 135-MetProArgArgProVal-140
 150-PheAlaAspArgAsnLeuArg-156
 166-GluHisAlaAspAlaAsp-171
 174-AlaPheArgArgArgAlaGlnVal-181
 183-AlaArgThrArgAla-187
 194-ArgArgValAspIleArgHisProAspPhe-203
 211-AspAsnValLysGly-215
 231-GlyPheArgArgCysSerAlaAlaGlyGlyArgValGlyThr-244
 246-ValProCysArgAlaGluTyrValGluTyrGlyAsnArgArgProHisArgLeuAlaAla-265
 269-IleThrGlnArgThrGlnLysArgGlnGlyAspGlyLysProPhe-283
 294-MetProMetProSerGluHis-300

Hydrophilic Regions - Hopp-Woods

1-MetSerLysArgLysSerIleAsn-8
 10-ProTyrGlnLysProAlaGlu-16
 26-PheTyrArgLysAsnArgArg-32
 45-SerProGlnLysCysArgAlaArgGly-53
 92-ValArgProArgArgLeuArg-98
 136-ProArgArgProVal-140
 150-PheAlaAspArgAsnLeuArg-156
 166-GluHisAlaAspAlaAsp-171
 174-AlaPheArgArgArgAlaGlnVal-181
 183-AlaArgThrArgAla-187
 194-ArgArgValAspIleArgHis-200
 231-GlyPheArgArgCysSerAlaAlaGlyGlyArgValGlyThr-244
 246-ValProCysArgAlaGluTyr-252
 254-GluTyrGlyAsnArgArgProHisArg-262
 269-IleThrGlnArgThrGlnLysArgGlnGlyAspGlyLysProPhe-283
a232

AMPHI Regions - AMPHI

23-GlnPheLeuGlyAlaPheAsnAspAsnVal-32
 55-GlyGlnMetLeuAsn-59
 74-SerLeuSerGlyGlnLeuGlyAsnLysPheAspLysAlaValLeuAlaArgTrpAlaLysValLeuGluMetI
 leIleMet-100
 127-ThrLeuPheGlyProLeuLysTyr-134
 160-AlaIleLeuPheGly-164
 167-LeuGlyThrAlaValAlaGlyValProProTyrIleValGlyIleLeuVal-183
 214-ValArgGlyThrLysSerLeuLeuArgGlu-223
 251-LeuProThrPheThrGln-256
 319-ArgPheGluGlyLeuAsn-324
 340-AlaValMetThrLeuIleGlyPhePheGlyGlyPhePheSerValProLeuTyrThrTrpLeu-360

Antigenic Index - Jameson-Wolf

1-MetTyrAlaLysLysGlyGlyLeuGlyLeuValLysSerArgArgPhe-16
 75-LeuSerGlnLeuGlyAsnLysPheAspLys-85

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139-AspTyrLeuAspAspLysGluLeuMetMet-148
 200-ValProAlaLysAlaAlaAspThrGlnIle-209
 215-ArgGlyThrLysSerLeuLeuArgGluThrValArgHisLysPro-229
 258-HisLeuGlyGlyAsnAspAsnVal-265
 286-LysPheSerArgGluArgLeuArg-293
 316-HisGlyHisArgPheGluGly-322
 363-AlaSerSerGluThrPheArgAlaArgAla-372
 420-IleLysArgGluArgArgPheLeu-427
 431-AlaIleArgLysLysPro-436

Hydrophilic Regions - Hopp-Woods

2-TyrAlaLysLysGlyGly-7
 11-ValLysSerArgArgPhe-16
 81-AsnLysPheAspLys-85
 140-TyrLeuAspAspLysGluLeuMet-147
 201-ProAlaLysAlaAlaAspThrGlnIle-209
 215-ArgGlyThrLysSerLeuLeuArgGluThrValArgHis-227
 286-LysPheSerArgGluArgLeuArg-293
 318-HisArgPheGluGly-322
 366-GluThrPheArgAlaArgAla-372
 420-IleLysArgGluArgArgPheLeu-427
 431-AlaIleArgLysLysPro-436

a233

AMPHI Regions - AMPHI

61-PheAlaAspLysValGlnThr-67
 71-GlnValArgValTrpLysAsn-77
 88-AsnGlyValAlaLysLeuLeuGluThr-96
 119-AlaLeuThrArgLeuIleGluGlnAlaGlyAsnAla-130
 139-ProValAlaAspThrLeuLysCysAlaAspGlyGlyAsn-151
 180-AlaAlaGluAsnLeuAspGlyIleThrAsp-189

Antigenic Index - Jameson-Wolf

1-MetLysArgLysAsnIle-6
 16-AlaArgPheGlyAlaAspLysProLysGlnTyrValGluIleGlySerLysThrValLeu-35
 43-GluArgHisGluAlaValAsp-49
 56-SerProGluAspThrPheAlaAspLysValGln-66
 75-TrpLysAsnGlyGlyGlnThrArgAlaGluThrValArgAsnGlyVal-90
 100-AlaGluThrAspAsn-104
 109-AspAlaAlaArgCys-113
 115-LeuProSerGluAlaIle-120
 123-LeuIleGluGlnAlaGlyAsnAlaAlaGluGlyGly-134
 142-AspThrLeuLysCysAlaAspGlyGlyAsnIle-152
 155-ThrValGluArgThrSerLeu-161
 182-GluAsnLeuAspGlyIleThrAspGluAlaSerAlaValGluLysLeuGlyIle-199
 206-GlyAspAlaArgAsnLeuLysLeuThrGlnProGlnAspAlaTyr-220

Hydrophilic Regions - Hopp-Woods

1-MetLysArgLysAsnIle-6
 18-PheGlyAlaAspLysProLysGlnTyrVal-27
 43-GluArgHisGluAlaValAsp-49
 56-SerProGluAspThrPheAlaAspLysValGln-66
 79-GlyGlnThrArgAlaGluThrValArg-87
 100-AlaGluThrAspAsn-104
 127-AlaGlyAsnAlaAlaGlu-132
 142-AspThrLeuLysCysAlaAsp-148

182-GluAsnLeuAspGlyIleThrAspGluAlaSerAlaValGluLysLeuGlyIle-199

206-GlyAspAlaArgAsnLeuLys-212

a234-2

AMPHI Regions - AMPHI

26-ArgSerLeuGluValGluLysValAlaSer-35

68-AspArgLeuGlySerGln-73

83-GlnGlnThrAsnArgPheAsnValLeuAsnArgThrAsn-95

121-GlyAspValThrGluPhe-126

206-AlaValAsnSerLeuValGlnAlaValAsp-215

Antigenic Index - Jameson-Wolf

21-AlaThrGluSerSerArgSerLeuGluValGluLysValAlaSer-35

51-ThrPheAspAsnArgSerSerPhe-58

62-IlePheSerAspGlyIleAspArgLeuGlySerGlnAla-74

83-GlnGlnThrAsnArgPheAsnValLeuAsnArgThrAsn-95

99-LeuLysGlnGluSerGlyIleSerGlyLysAlaHisAsnLeuLysGlyAlaAspTyr-117

121-GlyAspValThrGluPheGlyArgArgAspValGlyAsp-133

140-LeuGlyArgGlyLysSerGlnIle-147

160-AsnThrSerGluIle-164

169-GlnGlyIleGlyGlu-173

175-AlaLeuSerAsnArgGluIle-181

185-GlyGlyThrSerGlyTyrAspAlaThrLeuAsnGlyLysValLeu-199

214-ValAspAsnGlyAlaTrpGlnProAsnArg-223

Hydrophilic Regions - Hopp-Woods

21-AlaThrGluSerSerArgSerLeuGluValGluLysValAla-34

52-PheAspAsnArgSerSerPhe-58

62-IlePheSerAspGlyGluAspArgLeuGlySerGlnAla-74

99-LeuLysGlnGluSerGlyIleSerGlyLysAlaHisAsn-111

122-AspValThrGluPheGlyArgArgAspValGlyAsp-133

141-GlyArgGlyLysSer-145

176-LeuSerAsnArgGluIle-181

a235

AMPHI Regions - AMPHI

8-LeuAlaAlaValLeuAlaLeu-14

18-GlnValGlnLysAlaProAsp-24

86-LeuThrAsnAlaAlaAspIle-92

95-ValArgProGluLysLeuHisGlnIlePhe-104

120-SerTyrGlnIleLeuAspSerValThrThr-129

165-GlyAlaLeuValSerAlaValValAsnGlnIleAlaAsnSerLeuThr-180

187-SerLysThrAlaAlaTyrAsnLeuLeuSerProTyr-198

Antigenic Index - Jameson-Wolf

20-GlnLysAlaProAspPheAspTyrThrSerPheLysGluSerLysProAla-36

43-ProLeuAsnGluSerProAspValAsnGlyThr-53

62-AlaProLeuSerGlu-66

79-GluThrPheLysGlnAsnGlyLeuThrAsn-88

93-HisAlaValArgProGluLysLeu-100

131-SerAlaLysAlaArgLeuValAspSerArgAsnGlyLysGluLeuTrpSerGlySerAlaSerIleArgGluGlySerAsnSerAsnSer-161

178-SerLeuThrAspArgGlyTyrGlnValSerLysThrAla-190

202-GlyIleLeuLysGlyProArgPheValGluGluGlnProLys-215

Hydrophilic Regions - Hopp-Woods

20-GlnLysAlaProAspPheAsp-26

29-SerPheLysGluSerLysPro-35
 44-LeuAsnGluSerProAspVal-50
 93-HisAlaValArgProGluLysLeu-100
 131-SerAlaLysAlaArgLeuValAspSerArgAsnGlyLysGluLeuTrp-146
 150-AlaSerIleArgGluGlySerAsnAsnSer-159
 179-LeuThrAspArgGlyTyrGln-185
 207-ProArgPheValGluGluGlnProLys-215
a236

AMPHI Regions - AMPHI

11-LeuCysThrAlaPheAlaAspGlyPhe-19
 107-PheAlaGlyPheAlaAspCysArgProPhe-116
 145-AlaAspAspValProArgPhePheAlaGlyGlu-155
 168-ArgAspValValGlnGlyGlyLeu-175
 215-ValGluGlyIleThrArgIle-221
 245-IleArgLeuLeuHisGlyIlePheAsnArgIleGluValAla-258
 316-ValAlaAspGlyPheArgHisPhe-323

Antigenic Index - Jameson-Wolf

42-GlyPheSerGlyAsnGlyLysPhe-49
 58-ArgHisGlnGlnSerLysAlaGln-65
 77-PhePheArgArgGlyAsnPheGlyPheGlyLeuGlnGlyArgThrAspGlyPhe-94
 98-GlnArgLeuAspGlyGlyTyr-105
 109-GlyPheAlaAspCysArgProPhe-116
 126-ValAspGlyArgGluLeuValProSerMetGluLys-137
 144-AlaAlaAspAspValPro-149
 155-GluAlaGlnAsnArgCysAsnGlnGluAsnGlnAlaAlaArgAspValValGlnGlyGlyLeu-175
 195-IleGluValGluArgAlaGlnValPheArgAlaGluArgAsnHis-209
 213-GlyLysValGluGlyIleThrArg-220
 222-LysIleThrGlyAsnAlaPheLeu-229
 261-GlyLysGlnLysAlaGlnGly-267
 292-IleGlyCysArgProGlnAlaGlnAspValArgAla-304
 310-PheLeuArgArgAspAspValAlaAspGly-319

Hydrophilic Regions - Hopp-Woods

89-GlyArgThrAspGly-93
 98-GlnArgLeuAspGlyGlyGly-104
 127-AspGlyArgGluLeuValProSerMetGluLys-137
 144-AlaAlaAspAspValPro-149
 156-AlaGlnAsnArgCysAsnGlnGluAsnGlnAlaAlaArgAspValVal-171
 195-IleGluValGluArgAlaGlnValPheArgAlaGluArgAsnHis-209
 214-LysValGluGlyIleThrArg-220
 261-GlyLysGlnLysAlaGlnGly-267
 295-CysArgProGlnAlaGlnAspValArgAla-304
 311-LeuArgArgAspAspValAlaAspGly-319
a239

AMPHI Regions - AMPHI

49-PheArgLeuIleGlnSerCys-55
 72-AsnAlaHisArgLysGln-77
 123-ProGlyPheAsnAlaLeuProAlaIlePhe-132
 165-SerSerAsnGluTrp-169
 221-PheCysAlaThrIleCysAlaSerLeuArg-230

Antigenic Index - Jameson-Wolf

6-GlyIleAlaArgAsnArgArgMetGlu-14
 19-CysArgArgProAspArgPheValValArgGlnThrArgLeuLeu-33

52-IleGlnSerCysGluValGluPro-59
 66-HisAsnGlyLysSerGlyAsnAlaHisArgLysGlnGlnLysGluIle-81
 100-ProAlaValArgSerAlaThrArgLysThrAla-110
 132-PheArgGlyGlySerGlyLysSerAlaSer-141
 144-AlaAlaGlnArgGlyArgGlyAlaCys-152
 164-ArgSerSerAsnGluTrpLys-170
 173-ThrAlaLysArgProProSerPheArgArgHisMetThrCysGlyAsnThrAlaProThrSerSerSer
 ArgLeuIleLys-200
 209-ValAlaGlySerCysProArgSerArgValArgThr-220
 248-TrpArgLeuAsnArgSerSerPro-255

Hydrophilic Regions - Hopp-Woods

6-GlyIleAlaArgAsnArgArgMetGluIle4
 20-ArgArgProAspArgPheValValArgGlnThrArg-31
 67-AsnGlyLysSerGlyAsnAlaHisArgLysGlnGlnLysGluIle-81
 102-ValArgSerAlaThrArgLysThrAla-110
 135-GlySerGlyLysSerIleSer-141
 146-GlnArgGlyArgGlyAlaCys-152
 165-SerSerAsnGluTrpLys-170
 173-ThrAlaLysArgProProSerPheArgArgHisMet-184
 193-SerSerSerArgLeuIleLys-200
 211-GlySerCysProArgSerArgValArgThr-220
 251-AsnArgSerSerPro-255
a240

AMPHI Regions - AMPHI

19-AlaAspValGlyArgPheLeuHis-26
 63-IleGlnCysLeuArgAsnHis-69
 87-AlaProLeuPheAlaValCysPro-94
 107-GlnGlyGluAspPheProArgAlaGlyIleGlnAsnHis-119
 154-ValPheArgGlyPheIleAlaArgGlyValGlnAlaValHisAsn-168
 188-PhelysArgLysPheGln-193

Antigenic Index - Jameson-Wolf

9-GlyThrGluThrArgArgGlnPheAla-17
 39-IleAlaHisGlyArgArgSerAspPheIleArg-49
 67-ArgAsnHisLysArgPheAspCysArgThrGlyPheAsp-79
 101-ValGlyGlyArgIleGlyGlnGlyGluAspPheProArgAlaGlyIleGlnAsnHisHisArgSerGly-12
 3
 139-GlnGlyLeuAsnProLeuIleGluGlyLysAspAspVal-151
 173-ValProGlnAsnAspPheArg-179
 187-ValPheLysSerAspPhe-192
 201-AsnIleGlyLysSerAspAspValCysLys-210

Hydrophilic Regions - Hopp-Woods

10-ThrGluThrArgArgGlnPheAla-17
 41-HisGlyArgArgSerAspPheIleArg-49
 67-ArgAsnHisLysArgPheAspCys-74
 105-IleGlyGlnGlyGluAspPheProArg-113
 145-IleGluGlyLysAspAspVal-151
 187-ValPheLysArgLysPhe-192
 203-GlyLysSerAspAspValCysLys-210
a241-1

AMPHI Regions - AMPHI

6-ThrArgAlaAlaLysHis-11
 35-ThrHisThrProHisGluProAlaSerSer-44

-457-

71-LysMetProSerGluMetGluGlnThrLeu-80
 109-PheLeuIleGlyCysIleAlaHisThrPheAsnArgSerLeuLys-123
 126-PheHisAlaCysGlnArgMetValAlaVal-135
 195-HisIleAspArgIleAlaGlyIleLeuThrValGln-206
 229-PheValGlnLysLeuIleValGlyIleIleHis-239

Antigenic Index - Jameson-Wolf
 1-MetProThrArgProThrArgAlaAlaLysHisProThrProProThrTrp-17
 23-CysProArgProProTyrArgProProSerValGlnThrHisThrProHisGluProAlaSerSerThrCysA
 laAlaLysSerAlaAsnArgArgGluAsnPheHis-58
 68-ProSerAsnLysMetProSerGluMetGluGlnThrLeuPheArgArgHisGlnIleProProSerCysArgG
 lnSer-93
 119-AsnArgSerLeuLysAlaAspPhe-126
 147-ThrIleAspAspAsnIleAla-153
 166-PheAspPheAsnArgGluHisAlaArg-174
 176-PheAsnThrAspGlnLeuIle181
 188-ArgIleValGlyArgLysArgHisIleAspArgIleAla-200
 209-PheHisGlnArgGluAsnAla-215
 244-ArgAsnHisGlyIle-248
 251-AspSerHisIleCysProPheArgAsnSerArgLeuIle-263

Hydrophilic Regions - Hopp-Woods
 1-MetProThrArgProThrArgAlaAlaLysHisProThr-13
 37-ThrProHisGluProAlaSer-43
 46-CysAlaAlaLysSerAlaAsnArgArgGluAsnPheHis-58
 70-AsnLysMetProSerGluMetGluGlnThrLeuPheArg-82
 120-ArgSerLeuLysAlaAspPhe-126
 166-PheAspPheAsnArgGluHisAlaArg-174
 188-ArgIleValGlyArgLysArgHisIleAspArgIleAla-200
 209-PheHisGlnArgGluAsnAla-215

a242

AMPHI Regions - AMPHI
 23-ProGluValAlaXxxGlnPheValAspPheValGlu-34
 43-GlyPheCysHisIleLeuGlnAsnLeuThrGly-53
 122-AsnProPheAspPheAspPheGlnAlaValVal-132
 137-HisGlnSerGlyPheGlyAspValPhe-145
 156-PheGluGlnGlyVal-160
 191-PheGlyHisThrArgLeuPheAspIleCys-200
 262-HisProPheAlaAspPheGlyAsnPheGlnAsnLeuLeuAlaLeu-276

Antigenic Index - Jameson-Wolf
 13-HisPheGluGlnArgAlaGlyGlyIleAla-22
 52-ThrGlyHisGlyAla-56
 75-SerHisAlaAspIlePheProProArgCysPheGlyAspGlyPheAlaGlnArgGlyPhe-94
 98-TrpArgAlaAspGlnAlaGlnAsnArgAla-107
 137-HisGlnSerGlyPhe-141
 152-LeuProArgGlnPheGluGlnGlyVal-160
 164-AlaTyrAspGlyGlyPheGlyArgHisArgArgHisHis-176
 283-MetArgCysAspArgIleGly-289

Hydrophilic Regions - Hopp-Woods
 13-HisPheGluGlnArgAlaGlyGlyIle-21
 98-TrpArgAlaAspGlnAlaGlnAsnArgAla-107
 155-GlnPheGluGlnGlyVal-160
 168-GlyPheGlyArgHisArgArgHisHis-176

283-MetArgCysAspArgIleGly-289

a243

AMPHI Regions - AMPHI

25-IlePheSerMetLeu-29

35-IleThrArgLeuAlaArgLysAlaValGlnArgLeuThrAlaSerHisIleGlnArgPheLeu-55

80-AspSerSerArgIleThrSerThrIleSerSer-90

Antigenic Index - Jameson-Wolf

29-LeuProSerAsnAlaPro-34

37-ArgLeuAlaArgLysAlaValGln-44

55-LeuThrGluSerLysThrGlyAlaAsnLysSerSerSerSerCysLysPro-71

77-SerAlaSerAspSerSerArgIle-84

102-SerThrThrGlyAlaValThrLysSer-110

Hydrophilic Regions - Hopp-Woods

37-ArgLeuAlaArgLysAlaValGln-44

55-LeuThrGluSerLysThrGlyAlaAsnLysSerSerSerSerCysLys-70

78-AlaSerAspSerSerArgIle-84

a244-1

AMPHI Regions - AMPHI

13-IleAlaAlaLeuLeuArg-18

24-AsnAlaLeuGlnGluIleAsnGlnIleIleProGlnThr-36

72-PheAlaCysHisArgLeuHisArgLeu-80

102-LysCysPheLeuGlnLeuValGln-109

111-HisLeuHisAlaHis-115

189-IleSerArgLeuCysGlySerLeuPhe-197

206-CysLeuAspPheHisArgLeuHis-214

217-AsnArgPhePheThr-221

245-TyrProArgLysIleArgThrPheSerArgAsnPheLysGlnArg-259

Antigenic Index - Jameson-Wolf

1-MetProSerGluAlaArgGlnAlaGlySerAspGly-12

20-ValTyrThrGlnAsnAla-25

35-GlnThrProSerGly-39

44-HisArgAsnHisSerArgAlaGlnHis-52

81-MetAspIleArgIle-85

91-PheArgIleAspPheLeuAsp-97

125-IleGlnLysArgHis-129

134-LeuAspArgGlnHisPheHisGlyLysLeuLeuSerGlyGluLeuValArg-150

179-GlnLeuGlyAsnProArgLeu-185

234-LeuLysThrAsnTrpLysSerSerLysSerTyrTyrProArgLysIleArgThrPheSerArgAsnPheLys

GlnArgGlnArgIleSerAsnProPheSerAsnProLeuProLysLys-273

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluAlaArgGlnAlaGlySerAspGly-12

46-AsnHisSerArgAlaGlnHis-52

81-MetAspIleArgIle-85

91-PheArgIleAspPheLeuAsp-97

236-ThrAsnTrpLysSerLysSer-242

247-ArgLysIleArgThrPheSerArgAsnPheLysGlnArgGlnArgIle-262

a246-2

AMPHI Regions - AMPHI

39-AlaValAsnIleAlaGlnCysPheThr-47

60-ArgCysAlaGluValLeuValGluGlnPheAlaAsnLeuPhePhe-74

83-AspMetGlyArgPhe-87

132-PheGlyCysAspAspValValAspAspPheAlaGlyPheGlyArgCysPheArgProVal-151
 156-GlnLeuGlyGlnValPhePheGln-163

Antigenic Index - Jameson-Wolf

1-MetHisGlyArgAsnGlyGlyThrGln-9
 18-GlnThrGlnArgThrCysPheSerAsnGlyGluValHisAlaThrGlnThrAspIleGlySer-38
 78-AspCysGlyHisHisAspMetGlyArg-86
 92-LeuAspAspGluLeuAla-97
 133-GlyCysAspAspValValAspAspPheAlaGlyPheGlyArgCysPheArg-149
 166-GlnGlnGlyArgGlnPheArgGln-173

Hydrophilic Regions - Hopp-Woods

1-MetHisGlyArgAsnGlyGly-7
 92-LeuAspAspGluLeuAla-97
 136-AspValValAspAsp-140
 169-ArgGlnPheArgGln-173
a247-1

AMPHI Regions - AMPHI

44-ValValSerSerCysSerLysIleAlaLysProGlyLysLysIleSerThrLeuGlnGlu-63
 153-PheAspSerSerThr-157

Antigenic Index - Jameson-Wolf

11-GluSerThrAspIleLysTyrProGly-19
 33-IleAspAspLeuAspAlaSerAla-40
 47-SerCysSerLysIleAlaLysProGlyLysLysIleSerThrLeuGlnGluAlaLysSer-66
 70-IleThrAsnAspAspLysGlnAsnGlyAsnIleThrArgGlnArgHis-85
 95-IleAlaGlyGluGluGlyLeu-101
 104-PheGlnLeuAspAspLysGlyLysTrpGlyAsn-114
 120-LysLysIleArgHisMetLys-126
 133-SerAspCysProGluAspAspAspAlaGlyLysGluGluLysPheLysTyrThrGlyThrPheAspSerSer
 ThrAsnAla-159
 171-SerGlyThrAspThrLysIleAlaAlaSerSerAspAsnHis-184
 192-AlaIleArgGlyGlyAsnValCysAlaAsnArgThrLeu-205

Hydrophilic Regions - Hopp-Woods

11-GluSerThrAspIleLys-16
 33-IleAspAspLeuAspAlaSerAla-40
 49-SerLysIleAlaLysProGlyLysLysIleSerThr-60
 62-GlnGluAlaLysSer-66
 71-ThrAsnAspAspLysGlnAsnGlyAsnIleThrArgGlnArgHis-85
 95-IleAlaGlyGluGluGlyLeu-101
 105-GlnLeuAspAspLysGlyLysTrpGly-113
 120-LysLysIleArgHisMetLys-126
 134-AspCysProGluAspAspAspAlaGlyLysGluGluLysPheLysTyr-149
 153-PheAspSerSerThr-157
 172-GlyThrAspThrLysIleAlaAlaSerSerAsp-182
a248-1

AMPHI Regions - AMPHI

88-GluAsnCysGlyLysGlyLeu-94
 121-ValGluAlaValLysArg-126
 148-ThrGlnSerValSerLysMetProArgTyrIleIleGlu-160
 168-GluAsnValTyrArgValThrAlaLysAlaTrpGlyLysAsn-181

Antigenic Index - Jameson-Wolf

1-MetArgLysGlnAsnThrLeuThr-8

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11-ProThrSerAspGlyGlnArgGly-18
 40-GlnSerTyrAsnThrGluGlnArgIleSerAlaAsnGluSerAspArgLysLeuAla-58
 64-AlaAlaLeuArgGluGlyGluLeuGln-72
 76-LeuGluTyrAspThrAspSerLysValThrPheSerGluAsnCysGlyLysGlyLeu-94
 99-AsnValArgThrAsnAsnAspAsnGluGluAlaPhe-110
 116-GlnGlyLysProThrValGluAlaValLysArgSerCysThrAlaLysSerThrGlyLeu-135
 137-IleAspAsnLysGlyMetGluTyrLysLysGlyThrGlnSerValSerLysMetProArgTyr-157
 162-LeuGlyVallysAsnGlyGluAsnValTyr-171
 177-AlaTrpGlyLysAsnAlaAsnThr-184
 192-ValSerAsnAsnAspGlu-197

Hydrophilic Regions - Hopp-Woods

1-MetArgLysGlnAsnThr-6
 11-ProThrSerAspGlyGlnArg-17
 42-TyrAsnThrGluGlnArgIleSerAlaAsnGluSerAspArgLysLeuAla-58
 64-AlaAlaLeuArgGluGlyGluLeuGln-72
 76-LeuGluTyrAspThrAspSerLysValThrPhe-86
 101-ArgThrAsnAsnAspAsnGluGluAlaPhe-110
 119-ProThrValGluAlaValLysArgSerCysThrAlaLysSer-132
 137-IleAspAsnLysGlyMetGluTyrLysLysGlyThrGlnSerValSerLysMetPro-155
 165-LysAsnGlyGluAsnValTyr-171
 193-SerAsnAsnAspGlu-197
a249-1
AMPHI Regions - AMPHI
 5-CysPheArgLeuLys-10
 15-GlyMetAlaLeuIleGluValLeuVal-23
 42-ThrValAlaSerValArgGluAla-49
 53-ThrIleValSerGlnIleThrGlnAsnLeuMetGluGlyMet-66

Antigenic Index - Jameson-Wolf

1-MetLysAsnAsnAspCysPheArgLeuLysAsnProGlnSerGly-15
 44-AlaSerValArgGluAlaGluThr-51
 70-ProThrIleAspSerAspSerAsnLysLysAsnTyr-81
 94-ValAspGlyAspPheGln-99
 102-AlaIleLysThrLysThrGlnLeuAla-110
 135-ValCysLysAspSerSerGlyValAla-143
 154-SerAsnCysAspGlySerAlaAsnGlyAspThrLeu-165
 173-AspSerAlaGlyAspSerAspIleAlaArgThrAsnLeuGluThrAsnGlyAsnAsn-191
 198-AlaArgValGlyGlyArgGlu-204

Hydrophilic Regions - Hopp-Woods

1-MetLysAsnAsnAspCysPheArgLeuLysAsnProGln-13
 44-AlaSerValArgGluAlaGluThr-51
 72-IleAspSerAspSerAsnLysLysAsn-80
 94-ValAspGlyAspPheGln-99
 102-AlaIleLysThrLysThrGlnLeuAla-110
 135-ValCysLysAspSerSerGly-141
 155-AsnCysAspGlySerIleAsnGly-162
 174-SerAlaGlyAspSerAspIleAlaArgThrAsnLeuGluThrAsnGly-189
 200-ValGlyGlyArgGlu-204
a250

AMPHI Regions - AMPHI

8-ArgAsnGluPheIleArgGlyIleLysGlu-17
 54-PheAlaGlyGlySerGlu-59
 61-AlaThrValAsnLeuTrpAlaGluPro-69

Antigenic Index - Jameson-Wolf

5-SerSerProArgAsnGluPheIleArgGlyIleLysGluSerSer-19
 34-MetGlnGlyGlyGlnLysGlyMetSer-42
 54-PheAlaGlyGlySerGlu-59
 90-GlyXxxGlyThrCysProAlaProGluArgAsnThrAlaGluLysSerArgAlaArg-108

Hydrophilic Regions - Hopp-Woods

5-SerSerProArgAsnGluPheIleArgGlyIleLysGluSerSer-19
 95-ProAlaProGluArgAsnThrAlaGluLysSerArgAlaArg-108
a251

AMPHI Regions - AMPHI

47-GlnAlaAlaAspLeuProArgAsnHisIleSerProAlaTyr-60
 81-ArgArgIleGly-85
 110-GlnValValAlaAspPheGlyGlyIleGluGlyPhe-121
 156-ArgThrValGlyArgThrValArgLeuLeuLysMetIle-168
 211-AlaArgThrValPheArgAlaHis-218
 255-LeuGlyGlnGluCysArg-260
 262-ArgHisIleAlaArgValGluSerLeuLeuArgValPheGluTyrAlaAlaAsp-279

Antigenic Index - Jameson-Wolf

9-GlnProArgAlaAspIleArgProProAlaGlnThrAspIleValProAsnCys-26
 34-AspAlaAlaArgArgAlaValArg-41
 50-AspLeuProArgAsnHisIleSer-57
 74-GlyGlyPheArgGlyArgPheArgArg-82
 98-IleArgValLysAlaValLysThrGluIle-107
 145-ArgLeuValGlyThr-149
 157-ThrValGlyArgThrValArg-163
 175-ProValValArgGluAlaGly-181
 208-ValLysHisAlaArgThrValPhe-215
 251-IleLysAsnArgLeuGlyGlnGluCysArgAsnArgHisIleAlaArgValGluSer-269
 286-LysThrLysThrArgAlaGluGlnProArgSerAla-297

Hydrophilic Regions - Hopp-Woods

10-ProArgAlaAspIleArgProProAlaGln-19
 34-AspAlaAlaArgArgAlaValArg-41
 76-PheArgGlyArgPheArgArg-82
 98-IleArgValLysAlaValLysThrGluIle-107
 157-ThrValGlyArgThrValArg-163
 175-ProValValArgGluAlaGly-181
 208-ValLysHisAlaArgThrValPhe-215
 253-AsnArgLeuGlyGlnGluCysArgAsnArgHisIleAlaArgValGluSer-269
 287-ThrLysThrArgAlaGluGlnProArg-295
a254

AMPHI Regions - AMPHI

6-ArgPheAsnThrTyrSerHis-12
 32-GlyHisGlyAspGlyTyrArg-38
 66-LysLeuLysSerIleLeuLys-72
 142-ValLeuAlaValMetLysSerLeuThrAlaSer-152

Antigenic Index - Jameson-Wolf

2-TyrThrGlyGluArgPheAsnThrTyrSer-11
 32-GlyHisGlyAspGlyTyrArg-38
 65-GlyLysLeuLysSerIleLeuLysLysThrAspHis-76
 94-SerLeuArgAsnGlyProGly-100

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120-ThrIleGlyArgLysSerGluLysArgLeuLeu-130
 177-AsnAspGluLysIleArgHisGlyHis-186

Hydrophilic Regions - Hopp-Woods

65-GlyLysLeuLysSerIleLeuLysLysThrAspHis-76
 120-ThrIleGlyArgLysSerGluLysArgLeuLeu-130
 177-AsnAspGluLysIleArgHis-183

a255**AMPHI Regions - AMPHI**

23-VallysThrCysAlaAspPheHisAlaPheAspGlyValAspAlaHisHisGly-40
 71-GlyIleGlnGlyPheAlaHis-77
 139-AlaGlyGlyPhe-143

Antigenic Index - Jameson-Wolf

40-GlyValGlyAspPheGly-45
 54-AlaGlnAlaAspGlyAspValGlyGly-62
 67-LeuArgAlaAspGlyIleGln-73
 91-Va1GlyGlyLysLysArgIleLeu-98
 115-GlyAsnValGlyGlyAspPheArgAla-123
 130-PhePheGlyAsnGlySerGlyGlyAsnAlaGly-140
 145-GlyGlyThrProAla-149

Hydrophilic Regions - Hopp-Woods

56-AlaAspGlyAspVal-60
 67-LeuArgAlaAspGly-71
 92-GlyGlyLysLysArgIleLeu-98
 119-GlyAspPheArgAla-123

a256-1**AMPHI Regions - AMPHI**

90-GlyValValValHisPheArgSerCysGlyGlyValAla-102
 127-ArgTyrArgGluIleTyrAlaVal-134
 141-AsnAlaLeuAlaLysTyrLeuGlyGluGln-150
 174-ArgPheAspSerGlyIleThrArgLeuLeu-183
 197-ArgSerLeuGlnGlyPheGlnThrAla-205
 207-AlaAlaGlyCysLysThrLeuGlyGluPheAspArgPheThrAlaProLeuHisGly-226
 233-TyrTyrArgGlnThrSerCysLysProLeuLeuLysHisValAla-247
 267-ProArgAlaAspGluValSer-273

Antigenic Index - Jameson-Wolf

4-ThrProProAspThrProPhe-10
 12-LeuArgAsnGlyAsnAlaAspThrIleAla-21
 24-PheLeuGlnArgSerAlaProAlaTyrArgArgGluLeuLeuProAspSerThrGlyLysThrLysThrAlaTyrAspPheSerAspGlyIleSerProAspAla-58
 67-LeuGluGlyGlySerGlySer-73
 82-AlaValArgAspArgGlyTrpAsn-89
 97-SerCysGlyGlyValAlaAsn-103
 112-GlyAspThrAlaGlu-116
 124-LeuAlaAlaArgTyrArgGlu-130
 147-LeuGlyGluGlnGlyGluAsnAlaLeu-155
 166-ValAspAlaGluAlaAlaGlyAsnArgPheAspSerGlyIle-179
 192-LeuIleProLysAlaArgSerLeuGln-200
 212-ThrLeuGlyGluPheAspAspArgPheThr-221
 227-PheAlaAspArgHisAspTyrTyrArgGlnThrSerCysLysProLeuLeu-243
 259-ProPheLeuProProGluAlaLeuProArgAlaAspGluValSerGlu-274
 292-SerThrGlyGlyArgLeu-297

311-AspSerPheArgThrAsnArgArg-318

Hydrophilic Regions - Hopp-Woods
 28-SerAlaProAlaTyrArgArgGluLeuLeuPro-38
 40-SerThrGlyLysThrLysThr-46
 83-ValArgAspArgGlyTrp-88
 124-LeuAlaAlaArgTyrArgGlu-130
 147-LeuGlyGluGlnGlyGluAsnAlaLeu-155
 166-ValAspAlaGluAlaAlaGlyAsnArgPheAspSerGlyIle-179
 192-LeuIleProLysAlaArgSer-198
 212-ThrLeuGlyGluPheAspAspArgPheThr-221
 227-PheAlaAspArgHisAspTyrTyrArg-235
 265-AlaLeuProArgAlaAspGluValSerGlu-274
 313-PheArgThrAsnArgArg-318

a257

AMPHI Regions - AMPHI
 24-SerPheLeuProAsn-28
 73-AspLeuValAsnLysValLeuAlaGluValAlaArgLeuGluLysMetPhe-89
 109-SerProProAlaAspPheLeuGluLeuLeuSerLeuAlaValIlePheThr-125

Antigenic Index - Jameson-Wolf

1-MetGlyArgHisPheGlyArgArgArgPhe-10
 31-AlaAlaAspAspGluLysArgAsnLysAspGluLysArgAsnGluAsn-46
 56-GlySerGlyAlaLys-60
 65-GlyValAspAspArgArgAlaAlaAspLeuVal-75
 83-AlaArgLeuGluLys-87
 92-TyrArgGluAspSerLeuIleSerArgLeuAsnArgAspGlyTyrLeuThrSerProProAlaAspPhe-114

Hydrophilic Regions - Hopp-Woods

4-HisPheGlyArgArgArgPhe-10
 31-AlaAlaAspAspGluLysArgAsnLysAspGluLysArgAsnGlu-46
 65-GlyValAspAspArgArgAlaAlaAspLeuVal-75
 83-AlaArgLeuGluLys-87
 92-TyrArgGluAspSerLeuIle-98
 100-ArgLeuAsnArgAspGlyTyr-106

a259-1

AMPHI Regions - AMPHI

154-TyrGlyArgValPheAlaAspIlePheGluLeuSer-165
 172-AlaPheLysGlyMetLeuLysLeuThrAlaGluTyrLysAsnIlePheGlyAspAlaCysArg-192
 203-AsnGlnAlaLeuGlnGluIleSerLysThrSerGlu-214

Antigenic Index - Jameson-Wolf

34-LysAlaTyrThrGluGluLeuProPro-42
 61-SerAlaArgSerLysAlaLysAlaGluLysPheTyrArgGluLysMetIleGln-78
 93-LeuGluHisLysPro-97
 105-LysAsnHisGlyLysGlyMetAlaGluGlnValArgPheLysAla-119
 121-ValLeuProAspAspGluAspAlaArgThrIleAla-132
 144-ClyThrAspAlaValAlaSerGlyGluThrTyrGlyArgVal-157
 168-LeuGluGlyArgAlaPhe-173
 189-AspAlaCysArgSerGluThrAlaLeu-197
 208-GluIleSerLysThrSerGluLysSerLysArg-218

Hydrophilic Regions - Hopp-Woods

35-AlaTyrThrGluGluLeuPro-41
 62-AlaArgSerLysAlaLysAlaGluLysPheTyrArgGluLysMetIleGln-78

-464-

93-LeuGluHisLysPro-97

106-AsnHisGlyLysClyMetAlaGluGlnValArgPheLysAla-119

121-ValLeuPrcAspAspGluAspAlaArgThrIleAla-132

168-LeuGluGlyArgAlaPhe-173

189-AspAlaCysArgSerGluThrAlaLeu-197

208-GluIleSerLysThrSerGluLysSerLysArg-218

a260

AMPHI Regions - AMPHI

12-ProPheSerSerLeuPheArgAlaLeuPhe-21

53-PheIleAspSerValGlyGlnValAlaAlaArgLeuPheGlnAlaPhe-68

154-ValGlnIleAsnGlnValGlyIleValAspLeuIlePrc-166

176-AlaThrGlyCysThrGlyIleCysProLysCysProThrGlyCysArgPro-192

Antigenic Index - Jameson-Wolf

20-LeuPheGluAspArgValGlyIle-27

30-GlyAlaHisAspAlaAlaGlu-36

38-AspPheLeuProGluGluPheThrArg-46

80-ProAlaPheArgAlaArgGluGlnAlaArgGlySerGly-93

96-AlaGlyAsnAspLeuArgValProHisLysAspAlaValGluValAspIleAspGlyGlyAsnThrVal-118

126-ThrHisPheAspAspGlyAspAla-133

139-AlaGluAlaArgPhe-143

184-ProLysCysProThrGlyCysArgProVal-193

Hydrophilic Regions - Hopp-Woods

20-LeuPheGluAspArgValGlyIle-27

30-GlyAlaHisAspAlaAlaGlu-36

82-PheArgAlaArgGluGlnAlaArgArgGlySer-92

98-AsnAspLeuArgValPrcHisLysAspAlaValGluValAspIleAspGly-114

127-HisPheAspAspGlyAspAla-133

139-AlaGluAlaArgPhe-143

186-CysProThrGlyCysArgProVal-193

a261

AMPHI Regions - AMPHI

22-GlnIlePheArgGln-26

32-AspThrAlaArgAlaPheAlaAlaAla-40

50-GlyLeuLeuAlaAspIleVal-56

92-ValHisGlyPheAspLysHis-98

137-AlaValTyrLysGlyIleArgAsnAlaValPhe-147

158-GlnGlyIleValArgAsnLeu-164

203-AspValPheAlaProVal-208

212-CysLeuAsnGlnAlaGlyGly-218

Antigenic Index - Jameson-Wolf

40-AlaAlaAspAspAlaVal-45

60-HisPheValArgGlnArgProSerLeuArgLeu-70

74-HisGlnArgArgValAspLeu-80

86-ArgGlnIleLysGlyAsnValHisGlyPheAspLysHisVal-99

111-AlaHisAlaArgAspAspValProTyr-119

126-AsnArgGlyIleGluGlnGluLysArgVal-135

149-SerPheAspGlyGlyGly-154

181-ArgAsnProAlaGly-185

197-LeuGluSerAsnGlyLeuAsp-203

214-AsnGlnAlaGlyGlyArgIleLeuThrAlaArgLysAspAspGlnGlyPhe-230

Hydrophilic Regions - Hopp-Woods

-465-

40-AlaAlaAspAspAlaVal-45
 60-HisPheValArgGlnArgProSerLeu-68
 74-HisGlnArgArgValAspLeu-80
 94-GlyPheAspLysHisVal-99
 112-HisAlaArgAspAspValPro-118
 127-ArgGlyIleGluGlnGluLysArgVal-135
 221-LeuThrAlaArgLysAspAspGlnGly-229
a263

AMPHI Regions - AMPHI
 32-AsnLeuIleGlyValLeuSerAsnAla-40
 42-GluAlaLeuAlaPheTyrGlnGluValGlyLysLeuAsnAlaAlaAsnSerLeuThr-60
 86-LysLeuAlaThrLeuLysLys-92
 100-LysAlaAlaArgAlaLeuAlaAlaGlyGlu-109
 115-LeuGlyAlaLeuAlaAlaPheThrGln-123
 135-GluGluLeuLysAlaPhePheAspAla-143
 157-ValAlaLeuAlaThrLeuCysAsnTyrValAsnAsnLeuGly-170

Antigenic Index - Jameson-Wolf
 10-GluThrAlaProGluAlaAlaLysAlaArgValGluAla-22
 37-LeuSerAsnAlaPro-41
 72-AlaArgThrAsnGlnCysGly-78
 97-GlnSerValLysAlaAlaArg-103
 108-GlyGluPheAspAspAlaLysLeu-115
 126-MetAlaLysLysGlyAlaValSerAspGluGluLeuLysAla-139
 170-GlyGlnThrGluIleAsnProGluLeu-178

Hydrophilic Regions - Hopp-Woods
 11-ThrAlaProGluAlaAlaLysAlaArgValGluAla-22
 97-GlnSerValLysAlaAlaArg-103
 108-GlyGluPheAspAspAlaLysLeu-115
 126-MetAlaLysLysGlyAlaValSerAspGluGluLeuLysAla-139
a264
AMPHI Regions - AMPHI
 55-ValAlaGluPheThrGlnThrGly-62
 96-IleProSerTyrValArgValThrAsnThrLys-106
 124-AsnArgIleIleAspValSer-130
 183-LeuAsnGlnAlaAlaGlnAsnLeuAlaSerSer-193

Antigenic Index - Jameson-Wolf
 27-AlaValValArgAlaGluLysLeuHisAlaSerAlaAsnArgSerTyrLysValAlaGlyLysArgTyrThrP
 roLysAsnGlnVal-55
 57-GluPheThrGlnThrGlyAsnAlaSerTrp-66
 68-GlyGlyArgPheHisGlyArgLysThrSerGlyGlyGluArgTyrAsp-83
 103-ThrAsnThrLysAsnGlyLysSerVal-111
 114-ArgValAsnAspArgGlyProPheHisGlyAsnArgIleIleAspValSerLysAlaAlaAla-134
 153-ValProGlyGlnSerAlaProValAlaGluAsnLysAspIlePheIle-168
 170-LeuLysSerPheGlyThrGluHisGluAla-179
 192-SerSerAlaSerAsnProAsnLeuSerValGluLysArgArgTyrGluTyr-208
 216-AlaSerGlnGluArgAlaAlaGluAlaGlnAla-228

Hydrophilic Regions - Hopp-Woods
 27-AlaValValArgAlaGluLysLeuHisAlaSerAlaAsnArgSerTyrLysValAlaGlyLysArgTyrThrP
 ro-51
 71-PheHisGlyArgLysThrSerGlyGlyGluArgTyrAsp-83
 103-ThrAsnThrLysAsnGlyLys-109

-466-

115-ValAsnAspArgGlyProPheHis-122
 125-ArgIleIleAspValSerLysAlaAlaAla-134
 159-ProValAlaGluAsnLysAspIlePhelle-168
 171-LysSerPheGlyThrGluHisGluAla-179
 199-LeuSerValGluLysArgArgTyrGluTyr-208
 216-AlaSerGlnGluArgAlaAlaGluAlaGluAlaGlnAla-228
a266

Antigenic Index - Jameson-Wolf

5-AsnAlaPheArgArgHisArgArgGlnCysProAsnArgLysProAlaMet-22
 51-ProLeuLysArgLysHisPhe-57
 80-SerArgAlaGlyAlaValHisAspGlnGlyTrpGlu-91
 114-TrpHisThrArgAsnArgGlu-120

Hydrophilic Regions - Hopp-Woods

5-AsnAlaPheArgArgHisArgArgGlnCysProAsnArgLysProAlaMet-22
 51-ProLeuLysArgLysHisPhe-57
 80-SerArgAlaGlyAlaValHis-86
a268-1

AMPHI Regions - AMPHI

6-AspGlyLeuHisLysPheLysHisIleCysSerAlaAla-18
 22-IleLysGluProLeuAspLys-28
 52-GlnGluValAspArgValSerGluTrp-60
 70-GluPheGluGlnPheTrpLysGlyLeuProGlnThrValGlnAsn-84
 89-SerGlnLysThrTrpLysSerGlyMetAspLys-99
 110-GluThrProAsnGlyIleLys-116

Antigenic Index - Jameson-Wolf

1-ValGlnSerArgTyrAspGly-7
 21-LeuIleLysGluProLeuAspLysAlaLysGlnArgAsnGluGluLeuGluAlaAlaGluGluAlaAlaAla-44
 47-AlaLeuGlyArgGluGlnGluValAspArgValSerGluTrpGluGluArgTyrLysLeuSerArgSerGluPhe-71
 82-ValGlnAsnLysLeuGlnAlaSerGlnLysThrTrpLysSerGlyMetAspLysIleCysAlaAsnAsnAlaLysAlaGluGlyGluThrProAsnGly-114
 119-GluLeuAlaCysLysThrAlaGluThrGluAlaArgLeuGluGluLeuHisAsnArgLysLysAlaLeuLeuAspGluMetAlaArgGluAlaAspLysLysGluLeuProLysArgLeu-158

Hydrophilic Regions - Hopp-Woods

3-SerArgTyrAspGly-7
 21-LeuIleLysGluProLeuAspLysAlaLysGlnArgAsnGluGluLeuGluAlaAlaGluGluAlaAlaAla-44
 47-AlaLeuGlyArgGluGlnGluValAspArgValSerGluTrpGluGluArgTyrLysLeuSerArgSerGluPhe-71
 91-LysThrTrpLysSerGlyMetAspLysIleCys-101
 104-AsnAlaLysAlaGluGlyGluThrProAsn-113
 119-GluLeuAlaCysLysThrAlaGluThrGluAlaArgLeuGluGluLeuHisAsnArgLysLysAlaLeuLeuAspGluMetAlaArgGluAlaAspLysLysGluLeuProLysArgLeu-158
a269

AMPHI Regions - AMPHI

54-TrpAspPheIleGlnAsnThr-60
 73-PheLysThrArgAlaLeuGlyArgPheSerSerPro-84

Antigenic Index - Jameson-Wolf

42-ProAlaSerSerAla-46
 60-ThrAlaSerProLysValSer-66

73-PheLysThrArgAlaLeuGlyArgPheSerSerPro-84
 90-LeuSerGlyArgGlyValLysLysProLeu-99
 107-GlnValAspThrSerAla-112

Hydrophilic Regions - Hopp-Woods

61-AlaSerProLysVal-65
 73-PheLysThrArgAlaLeuGly-79
 93-ArgGlyValLysLysProLeu-99
a270
AMPHI Regions - AMPHI
 41-AspLeuThrGluGlyCys-46
 49-ProAspGlySerArg-53
 100-GlnProSerGlyThrTrp-105

Antigenic Index - Jameson-Wolf

1-MetAsnLysAsnArgLysLeu-7
 41-AspLeuThrGluGlyCysThrLeuProAspGlySerArgValArgAlaAlaAlaValSerThrLysLysProP
 he-65
 71-HisAlaProAlaGlyThrGlu-77
 86-LysAsnMetAspMetGlyPhe-92
 95-TyrMetPheGluArgGlnProSerGlyThr-104
 116-ValGluGlyArgArgAspPheThrAla-124
 128-IleGlySerArgThrPhe-133

Hydrophilic Regions - Hopp-Woods

1-MetAsnLysAsnArgLysLeu-7
 49-ProAspGlySerArgValArgAla-56
 60-SerThrLysLysProPhe-65
 73-ProAlaGlyThrGlu-77
 96-MetPheGluArgGlnPro-101
 116-ValGluGlyArgArgAspPheThrAla-124
a271-2

AMPHI Regions - AMPHI

6-MetAlaArgIleTrp-10
 20-SerProCysProAla-24
 29-ProLysSerLeuAlaLysCysAla-36

Antigenic Index - Jameson-Wolf

26-ThrThrLysProLysSerLeuAlaLys-34
 41-ArgSerAsnCysLeu-45
 60-CysSerSerThrThrGlyAlaProThrSerArg-70
 78-SerAlaSerIleAsnLysAspThrArgMetProAlaSerVal-91
 102-CysCysAlaAsnThrSerLysProProSer-111

Hydrophilic Regions - Hopp-Woods

27-ThrLysProLysSerLeuAla-33
 80-SerIleAsnLysAspThrArgMet-87
 105-AsnThrSerLysProPro-110
a272-2
AMPHI Regions - AMPHI
 44-IleThrArgIleThrAspGlu-50
 70-AlaGluGluPheSerSerThrAsn-77
 106-PheArgAlaIleThrSer-111
 165-IleIleThrIleGluAspProIleGlu-173

194-AsnTrpMetAlaAlaLeuLysAsnThrLeuArgGlnAla-206
 244-AsnGlnAlaLeuAspArgIleIleAsn-252
 307-GlyAsnIleHisGluIleLysGluValMetLys-317
 328-AspGlnHisLeuTyrGln-333
 343-GlnAspAlaLeuLysAsnAlaAspSer-351

Antigenic Index - Jameson-Wolf

2-PheThrAspGluAsnMetThrAlaLysGluGluLeu-13
 19-HisMetAsnLysAsnLysGlySerAsp-27
 38-MetLysLeuAspGlyLysIleThrArgIleThrAspGluProLeuThrAlaGluLysCysMet-58
 68-LysGlnAlaGluGluPheSerThrAsn-78
 85-LeuProAspThrSerArgPheArgVal-93
 109-IleThrSerLysIleProLysPheGluSerLeuAsn-120
 128-ValAlaLeuLysLysArgGly-134
 142-ThrGlySerGlyLysSerThrSerLeu-150
 154-IleAspTyrArgAsnGluAsnSerPheGly-163
 168-IleGluAspProIle-172
 176-HisGluHisLysAsnCys-181
 184-ThrGlnArgGluValGlyValAspThrGluAsn-194
 199-LeuLysAsnThrLeuArgGlnAlaProAsp-208
 214-GluIleArgAspArgGluThrMet-221
 241-AsnSerThrAsnGlnIleLeuAspArg-249
 254-ProGluGluArgArgGluGlnLeuLeu-263
 278-LeuValProArgAspGlyGlyLysGlyArgValAlaAla-290
 310-HisGluIleLysGluValMetLysLysSerThr-320
 336-GluLysGlyGluIleSerLeu-342
 344-AspAlaLeuLysAsnAlaAspSerAlaHisAspLeu-355
 361-LeuArgSerArgGlnAlaGlnSerSerGlyProAspLeuGluLeuLeu-376

Hydrophilic Regions - Hopp-Woods

2-PheThrAspGluAsnMetThrAlaLysGluGluLeu-13
 20-MetAsnLysAsnLysGlySerAsp-27
 38-MetLysLeuAspGlyLysIleThrArgIleThrAspGluProLeuThrAlaGluLysCysMet-58
 68-LysGlnAlaGluGluPheSerSer-75
 87-AspThrSerArgPheArgVal-93
 112-LysIleProLysPheGluSer-118
 128-ValAlaLeuLysLysArgGly-134
 143-GlySerGlyLysSerThrSer-149
 155-AspTyrArgAsnGluAsnSer-161
 168-IleGluAspProIle-172
 176-HisGluHisLysAsn-180
 184-ThrGlnArgGluValGlyValAspThr-192
 201-AsnThrLeuArgGlnAlaPro-207
 214-GluIleArgAspArgGluThrMet-221
 245-GlnAlaLeuAspArg-249
 255-ProGluGluArgArgGluGlnLeuLeu-263
 278-LeuValProArgAspGlyGlyLysGlyArgValAlaAla-290
 310-HisGluIleLysGluValMetLysLysSerThr-320
 336-GluLysGlyGluIleSerLeu-342
 344-AspAlaLeuLysAsnAlaAspSerAlaHisAspLeu-355
 361-LeuArgSerArgGlnAlaGlnSerSerGlyProAspLeuGluLeu-376
a274
AMPHI Regions - AMPHI
 31-TyrLysAspGlyLys-35
 111-GluAlaValPheLysThrLeuSerPro-119

Antigenic Index - Jameson-Wolf

25-LeuValThrAspAspTyrTyrLysAspGlyLysHisIleAsp-38
 40-GlnLeuHisArgAspGluGluAlaValArgArgHisIle-52
 60-ProAspMetAsnIle-64
 71-GlyGluPheAspGlyLysGlnPro-78
 85-HisProThrArgLysAlaAspAspGlnThrVal-95
 99-ProValGlySerAlaGlnAsnGlyArgAlaGluTyr-110
 117-LeuSerProThrAsnHis-122
 126-ArgValGluAspAlaAlaGly-132
 136-ValGluAsnLysTrpIleThrSerGlnGlyAsnAlaValAspLeuThrProMetAspLysLeuPheAsnAsn
 ThrGluSerLys-163

Hydrophilic Regions - Hopp-Woods

29-AspTyrTyrLysAspGlyLysHisIleAsp-38
 40-GlnLeuHisArgAspGluGluAlaValArgArgHisIle-52
 72-GluPheAspGlyLysGln-77
 86-ProThrArgLysAlaAspAspGlnThrVal-95
 104-GlnAsnGlyArgAlaGluTyr-110
 126-ArgValGluAspAlaAlaGly-132
 151-ThrProMetAspLysLeuPheAsn-158
a276

AMPHI Regions - AMPHI

9-MetMetArgSerAlaProSerMetValValArgArgTrpAlaThrMetMet-25
 60-SerPheLysMetAlaArg-65
 80-ProPheAspProMetGlyTrp-86
 115-GlyArgLeuTyrArgThrPheSerAsn-123
 164-ThrLysArgGlySerArgLeu-170
 207-SerThrSerThrLeuArgLysLeuMetArgProSerThr-219

Antigenic Index - Jameson-Wolf

10-MetArgSerAlaProSerMetVal-17
 29-PheSerIleArgArgSerSerAlaCysTrpThrArgArgSerAspSerLeuSer-46
 52-SerSerAsnAsnAsnIle-57
 67-MetAlaThrArgCysArgCysProProAspLysLeuLeuPro-80
 82-AspProMetGlyTrp-86
 88-SerProSerGlyAspAlaSerIleArg-96
 103-TrpArgAlaAspArgThrSerAlaSerProAlaSerGlyArgLeuTyr-118
 121-PheSerAsnArgValSerSerAsnArgAsnThrSerTrpGluThrArgAlaAsnTrpAlaArgArgGlnSer
 SerLeu-146
 158-LeuProAlaAspGlySerThrLysArgGlySerArgLeuThrThr-172
 176-ProLeuProGluArgProThrArgAlaThrArgSerProCysLeuMetSerArgLeuLysProSerArgAla
 LeuMetProSerGluArgTyrSerThrSerThrLeuArgLysLeuMetArgProSerThrArgCysGlyAla-223
 229-CysSerGlyGlyValSerArgAsnAlaHisThrProSerAlaAlaArgAsn-245

Hydrophilic Regions - Hopp-Woods

29-PheSerIleArgArgSerSer-35
 38-TrpThrArgArgSerAspSerLeu-45
 67-MetAlaThrArgCysArgCysProProAspLys-77
 90-SerGlyAspAlaSerIleArg-96
 104-ArgAlaAspArgThrSerIle-110
 124-ArgValSerSerAsnArgAsnThrSerTrpGluThr-135
 137-AlaAsnTrpAlaArgArgGlnSerSer-145
 161-AspGlySerThrLysArgGlySerArg-169
 176-ProLeuProGluArgProThrArgAlaThrArg-186

192-SerArgLeuLysProSerArg-198
 200-LeuMetProSerGluArgTyrSer-207
 210-ThrLeuArgLysLeuMetArgProSerThrArgCys-221
 232-GlyValSerArgAsnAlaHis-238
a277
AMPHI Regions - AMPHI
 43-PheGluValValGlyGlyLeuPheAspPheValLeu-54
 70-CysProAsnGluValIleAspValPheHisAlaLeuGln-82
 87-AlaPheAspAlaValGlyAspPheAlaGluTyrGlyGlyAlaValAspAlaAlaAspLeuLeuGluIleGlyGluLeuGlyTyrPheHis-116
 180-AlaValGlyValValAlaValAla-187

Antigenic Index - Jameson-Wolf
 2-ProArgPheGluAspLysLeuValGlyArgGlnGlyGluGlyGlyVal-17
 69-PheCysProAsnGluVal-74
 95-AlaGluTyrGlyGly-99
 118-ValGluProAspPheProAlaGlnThrProArgAlaGluGlyGly-132
 138-PheAspLysAlaAsp-142
 162-AspIleGlyGlySerGlyLeuGluGlyAspLeu-172
 196-LeuAspValGlyGlyLysProArgLeuGlyAla-206
 208-CysAlaGlnThrGlyGlyMetGly-216
 219-GlyThrAspPheHis-223
 226-GlyLeuAspAspGlyAla-231
 239-LeuGlnPheGluAspAspLeuLeuGluGlyLysHisGlyLeu-252

Hydrophilic Regions - Hopp-Woods
 2-ProArgPheGluAspLysLeuValGlyArgGlnGlyGlu-14
 118-ValGluProAspPhe-122
 126-ThrProArgAlaGluGly-131
 138-PheAspLysAlaAsp-142
 167-GlyLeuGluGlyAspLeu-172
 198-ValGlyGlyLysProArgLeuGlyAla-206
 226-GlyLeuAspAspGlyAla-231
 239-LeuGlnPheGluAspAspLeuLeuGluGlyLysHisGlyLeu-252
a278

AMPHI Regions - AMPHI
 7-GlyAlaIlePheSerIleGly-13
 20-IleGlyProLeuProSerIleGlyArg-28
 42-ThrGlyThrSerLys-46
 101-ArgThrIleProSerValThrGluIle-109
 123-PheSerIleLeuAlaLeuIleLysSerLeuIleSer-134
 157-LeuTyrArgGlnIleGlnAsnLeuIleThrHisPheAsnPheTyrAlaAla-173
 189-GluThrLeuIleGlnHisLeuArgGlnLeuAlaAsp-200

Antigenic Index - Jameson-Wolf
 25-SerIleGlyArgProAsnAlaSerThrThrArgProThrSerSerArgProThrGlyThrSerLysIleArgPro-49
 63-SerProAsnThrThrAlaProThrGluSerArgSerArgPheIleAla-78
 80-ProLysValLeuProGlyAsnSerSerIle-89
 93-IleAlaSerAspLysProTrpMetArg-101
 110-ThrValProArgValArgThrSerAlaPheThrAspArgPheSer-124
 146-ArgHisSerArgValGlnGlyThr-153
 178-PheAspPheAspArgAspPhe-184
 209-ThrValAsnAspGlyArgAspMetValGlu-219

Hydrophilic Regions - Hopp-Woods

27-GlyArgProAsnAlaSerThrThrArgProThrSerSerArgProThrGlyThrSerLysIleArgPro-49
 68-AlaProThrGluSerArgSerArgPheIleAla-78
 93-IleAlaSerAspLysProTrp-99
 110-ThrValProArgValArgThr-116
 146-ArgHisSerArgValGln-151
 178-PheAspPheAspArgAspPhe-184
 211-AsnAspGlyArgPheAspMetValGlu-219
a279

AMPHI Regions - AMPHI

6-GlyCysLeuIleSer-10
 47-AlaAlaSerIleAlaArgSerThrAla-55
 58-LeuProAlaIleThrThr-63
 74-ThrThrSerSerCysAlaAsp-80

Antigenic Index - Jameson-Wolf

13-XxxArgAlaSerAla-17
 29-TrpGluGlyThrAspThrGlySerGlyArgAlaArgLeuAla-42
 64-CysProGlyGluLeuLysLeuThr-71
 74-ThrThrSerSerCysAlaAspSer-81
 88-CysSerSerSerLysProArgIle-95
 101-ThrProCysGlyThrAlaAspCysIleSerSerAlaArgXxxArgThrSerLeu-118
 120-AlaSerAlaLysSerAsnAlaProAla-128
 148-ProProAlaSerGlu-152

Hydrophilic Regions - Hopp-Woods

13-XxxArgAlaSerAla-17
 29-TrpGluGlyThrAspThrGlySerGlyArgAlaArgLeuAla-42
 66-GlyGluLeuLysLeu-70
 89-SerSerSerLysProArgIle-95
 110-SerSerAlaArgXxxArgThrSerLeu-118
 120-AlaSerAlaLysSerAsnAla-126
a280

AMPHI Regions - AMPHI

27-SerPheSerIleLeuGlyAspValAlaLys-36
 64-AspIleLysIleArgSerAla-71
 85-AspIleGlnArgAlaValLys-91
 97-TyrAlaGluAlaThrLysGlyIleGlnProLeuLys-108
 150-AlaTyrAlaGlnAsnValAlaGluAlaLeuIleLys-161
 237-ValAlaAlaIleArgGlnIleLys-245
 247-GluGlyIleLysAlaValPheThrGlu-255
 258-LysAspThrArgMetValAspArgIleAlaLysGluThr-270
 278-LeuTyrSerAspAlaLeuGlyAsnAlaProAlaAspThrTyrIle-292

Antigenic Index - Jameson-Wolf

1-MetLysHisProLys-5
 38-IleGlyGlyGluArgValSer-44
 51-AlaAsnGlnAspThrHis-56
 61-ThrSerGlyAspIleLysLysIleArgSerAlaLys-72
 82-GluAlaAlaAspIleGlnArgAlaValLysGlnSerLysValSerTyrAlaGluAlaThrLysGlyIleGln-105
 107-LeuLysAlaGluGluGluGlyGlyHisHisHisAspHisAspHisAspHisAspHisAspHisGluGlyHis
 HisHisAspHisGlyGluTyrAspProHisvalTrpAsnAspPro-145
 159-LeuIleLysAlaAspProGluGlyLysValTyrTyr-170
 180-GlnLeuLysLysLeuHisSerAspAla-188

-472-

196-ProAlaAlaLysArgLysValLeuThr-204
 212-MetGlyLysArgTyrHis-217
 222-AlaProGlnGlyValSerSerGluAlaGluProSerAlaLysGln-236
 242-ArgGlnIleLysArgGluGlyIle-249
 255-GluAsnIleLysAspThrArgMetValAspArgIleAlaLysGluThrGlyVal-272
 274-ValSerGlyLysLeuTyrSer-280
 286-AlaProAlaAspThr-290
 295-TyrArgHisAsnIle-299

Hydrophilic Regions - Hopp-Woods

1-MetLysHisProLys-5
 38-IleGlyGlyGluArgValSer-44
 63-GlyAspIleLysLysIleArgSerAlaLys-72
 82-GluAlaAlaAspIleGlnArgAlaValLysGlnSerLys-94
 99-GluAlaThrLysGly-103
 107-LeuLysAlaGluGluGluGlyGlyHisHisHisAspHisAspHisAspHisAspHisGluGlyHis
 HisHisAspHisGlyGluTyrAsp-138
 159-LeuIleLysAlaAspProGluGly-166
 180-GlnLeuLysLysLeuHisSerAspAla-188
 196-ProAlaAlaLysArgLysValLeuThr-204
 226-ValSerSerGluAlaGluProSerAlaLysGln-236
 242-ArgGlnIleLysArgGluGlyIle-249
 255-GluAsnIleLysAspThrArgMetValAspArgIleAlaLysGluThrGlyVal-272
a281

AMPHI Regions - AMPHI

62-AlaAlaGlyMetLeuMetAlaLeuLeuAlaGlyLeuValSerArgPhe-77
 126-LeuGlnLeuIleAlaValSerThrLeuThr-136
 140-LeuAlaValIleTyrArg-145
 179-LeuValSerGlyPheGlnAlaLeuGlyThrLeuMetSerVal-192
 205-TrpAlaLysHisMet-209
 216-SerValLeuThrAlaLeuLeuCysGly-224

Antigenic Index - Jameson-Wolf

25-ArgArgMetSerLeu-29
 78-ThrThrLeuLysGluAspAlaAsn-85
 102-SerLysAsnGlySerSerVal-108
 159-SerValGlyGlyLysGlyGly-165
 236-IleProSerGlyPro-240
 256-LeuGlyLysGluGlyGlyIle-262
 266-TrpLeuLysAsnHisArgHisHisThrThr-275

Hydrophilic Regions - Hopp-Woods

25-ArgArgMetSerLeu-29
 78-ThrThrLeuLysGluAspAlaAsn-85
 103-LysAsnGlySerSer-107
 256-LeuGlyLysGluGlyGlyIle-262
 267-LeuLysAsnHisArgHisHisThr-274
a282

AMPHI Regions - AMPHI

10-LeuIleValAlaPheLeuValIleAsnProPheSerAlaLeu-24
 50-ValPheAlaValIleAlaValPheAlaLeuIleGlyGlyThrLeu-64
 111-ValArgProAlaArgAsn-116
 176-ValSerArgLeuLeu-180
 186-ThrIleLeuAsnArgIleMetGlyMet-194

Antigenic Index - Jameson-Wolf

31-ThrAsnGlyHisSerThrLysGluArgArgLysValAlaArg-44
 92-AsnGlyAsnAspAsnProAlaLysGlnAsnLeuGlyAlaGlnProGluThrGlyGlnValArgProAlaArgA
 snAlaGlyAla-119

Hydrophilic Regions - Hopp-Woods

34-HisSerThrLysGluArgArgLysValAlaArg-44
 92-AsnGlyAsnAspAsnProAlaLysGlnAsnLeu-102
 104-AlaGlnProGluThrGlyGlnValArgProAlaArgAsn-116
 a283

AMPHI Regions - AMPHI

11-ThrLeuAlaSerPheLeuPro-17
 32-GlyGlyAsnSerTyrSerAspValProLysGlnLeuHis-44
 67-AlaAspAlaGlyLysArgThr-73

Antigenic Index - Jameson-Wolf

28-TrpTyrGlyGlyGlyAsnSerTyrSerAspValProLysGlnLeuHisProAspGlnSerGln-49
 53-LeuArgThrArgGlnThrLysProAlaValLysProAlaGlnAlaAspAlaGlyLysArgThrAspGlyAlaA
 laGlnGluAsnAsnProAspThrAlaGluLysAsnArgGlnLeuGluGluGluLysLysArgIleAlaGluThrGL
 uArgGlnAsnLysGluGluAsnCysArgIleSerLysMetAsnLeu-117
 121-GlyAsnSerAsnAlaLysAsnLysAspAspLeuIleArgLysTyrAsnAsnAlaValAsnLysTyrCysArg
 -144

Hydrophilic Regions - Hopp-Woods

35-SerTyrSerAspValProLys-41
 43-LeuHisProAspGlnSerGln-49
 53-LeuArgThrArgGlnThrLysProAlaValLysProAlaGlnAlaAspAlaGlyLysArgThrAspGlyAlaA
 laGlnGluAsnAsnProAspThrAlaGluLysAsnArgGlnLeuGluGluGluLysLysArgIleAlaGluThrGL
 uArgGlnAsnLysGluGluAsnCysArgIleSerLysMetAsnLeu-117
 123-SerAsnAlaLysAsnLysAspAspLeuIleArgLysTyrAsnAsnAlaValAsnLysTyrCysArg
 a284

AMPHI Regions - AMPHI

43-GluAlaPheAlaGlyPhePheGluThrVal-52
 61-ThrPheAlaAlaArgPhe-66
 125-ValAspPheAspValPhe-130
 154-ValValPheArgLeuPheArgGlnValValValAsp-165
 174-AspThrAlaCysGlyAsnValGlyGly-182
 187-AlaAlaAlaPheAlaGlnIleHisGln-195
 216-PheValGlnPheIleArgAspAspPheGlyHisGly-227
 277-PheArgValPheGlyGlnPheAlaArgGlnPheAla-288
 304-PheArgArgGlyPheAspAspGlyPheAspValValAspLys-317
 340-AlaAlaLeuHisGlnValHisGlnThrAla-349
 352-GlyAspAsnGlnIleAspargPheAlaGln-361
 407-AlaArgAlaPheAlaArgPhePheAlaAlaPheGlyGlnSerLeuGlnSer-423

Antigenic Index - Jameson-Wolf

1-MetProSerGluThrArgAsnArgPhe-9
 109-PheAspGlyGlnPhe-113
 132-HisPheGlyLysArgAsnArgAsnThrArgAla-142
 147-GlyAlaProAspAlaVal-152
 166-AsnValGlyAsnGlyArgTyrValAspThrAlaCysGlyAsnValGlyGlyAsnGlnAsn-185
 209-AlaValGlyGlyGlu-213
 219-PheIleArgAspPheGlyHisGlyPheGlyGlyArgGluAsnHisAla-235
 273-AspPheAspAspPheArg-278

-474-

286-GlnPheAlaAspArgAlaValProSerGlyGlyGluGlnGlnSer-300
 303-ValPheArgArgGlyPheAspAspGlyPheAspValValAspLysAlaHis-319
 347-GlnThrAlaArgArgGlyAspAsnGlnIleAspArgPheAla-360
 362-GlyAlaGlyLeuValAlaGluArgCysThrThrAspAspAlaAspGlyThrGluProThr-381
 398-PheAlaGlyArgArgGlnHisGlnArgAlaArgAla-409
 419-GlnSerLeuGlnSerArg-424

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluThrArgAsnArgPhe-9
 134-GlyLysArgAsnArgAsnThrArgAla-142
 220-IleArgAspAspPheGly-225
 229-GlyGlyArgGluAsnHisAla-235
 286-GlnPheAlaAspArgAlaValProSerGlyGlyGluGlnGln-299
 306-ArgGlyPheAspAspGlyPheAspValValAspLysAlaHis-319
 347-GlnThrAlaArgArgGlyAspAsnGlnIleAspArgPheAla-360
 366-ValAlaGluArgCysThrThrAspAlaAspGlyThrGlu-379
 398-PheAlaGlyArgArgGlnHisGlnArgAlaArgAla-409
a285-1

AMPHI Regions - AMPHI

15-ValCysPheLeuGly-19
 34-GlnIleProSerTrp-38
 50-GlyThrLeuLeuAspGlyPheAsp-57
 116-SerLeuProAspSerIleAspLeuPro-124
 208-HisSerThrAlaArg-212
 240-HisProPheAlaGluSerLeuAspLysThrLeuGluGluValLeu-254
 266-ValProSerLeuPro-270
 280-AlaIleProSerPheSerAsp-286
 313-GlnValLeuGlySer-317
 592-IleGlyLysAlaAlaAspIle-598
 609-ProAspThrSerArg-613
 629-GlyAlaGluValValAsp-634
 671-GlyIleAsnArgGluLeuThrArgTrp-679
 747-IleAlaGluLeuHisAsnPhePheLysProProPhe-758
 776-AlaArgGlyTyrLeu-780
 836-PheGlyGlyAsnMetAlaAsn-842
 848-ArgIleThrAlaSerLeuProAspLeuGlyThrLeu-859
 868-GlnAsnIleThrGlySerLeuAsnAlaAla-877
 955-GlySerIleAlaAsp-959
 1008-ThrAlaGluLeuSer-1012
 1061-ValThrGlyMetIleLys-1066
 1135-SerGlyGlySerValArgGlyValGlyThrValArg-1146
 1165-ThrValSerPheValGlyProLeuAsn-1173
 1190-AlaGlyValGluIleLeuGlySerLeuAsn-1199
 1244-LeuAlaGlyGlnIle-1248
 1305-ValLysLeuIleTyrArgLeuThrArgAlaIleGlnAlaValAlaArgIleGlySer-1323

Antigenic Index - Jameson-Wolf

43-IleSerSerGlnAsnLeuLysGlyThrLeuLeuAspGlyPheAspGlyAspAsnTrpSerIleGluThrGluGlyAlaAspLeuLysIleSerArg-74
 80-LysProSerGluLeuMetArgArgSerLeuHis-90
 104-LysProThrProProLysGluGluArgProProLeuSerLeuProAspSerIleAsp-122
 130-AspArgPheGluThrGlyLysIleSerMetGlyLysAlaPheAspLysGlnThrValTyr-149

151-GluArgLeuAspAlaSerTyrArgTyrAspArgLysGlyHisArgLeuAspLeuLysAlaAlaAspThrPro
TrpSerSerSerGlySerAla-182
185-GlyLeuLysLysProPheAla-191
198-ThrLysGlyLeuGluGlyLysThrIle-207
209-SerThrAlaAlaArgLeuSerGlySerLeuLysAspValArgAla-222
224-LeuAlaIleAspGlyGlyAsnIleArgLeuSerGlyLysSer-237
244-GluSerLeuAspLysThrLeuGlu-251
268-SerLeuProAspAla-272
292-GlySerLeuAspLeuGluAsnThrLys-300
302-GlyPheAlaAspArgAsnGlyIleProVal-311
320-IleArgGlnAspGlyThrValHis-327
337-GlyArgGlyGlyIleArgLeuSerGlyLysIleAspThrGluLysAspIleLeu-354
362-SerValGlyAlaGluAspValLeu-369
372-AlaheLysGlyArgLeuAspGlySerIle-381
387-ThrAlaSerProLysIle-392
400-ThrAlaArgThrAspGlySerLeu-407
411-SerAspProAlaAsnGlyGlnArgLysLeuVal-421
430-GlyGlnGlySerLeuThr-435
442-LeuPheLysAspArgLeuLeuLysLeuAspIleArgSerArgAlaPheAspProSerArgIleAspProGln
Leu-466
480-GluLeuAlaLysGluLysPheThrGlyLys-489
508-IleValTyrGluSerArgHisLeuProArgAlaAlaVal-520
522-LeuArgLeuGlyArgAsnIleIleLysThrAspGlyGlyPheGlyLysLysGlyAspArgLeuAsn-543
548-AlaProAspLeuSerArgPheGly-555
563-AsnValArgGlyHisLeuSerGlyAspLeuAspGlyGlyIleArgThrPheGluThrAspLeuSerGlyAla
Ala-587
594-LysAlaAlaAspIleArgSer-600
605-LeuLysGlySerProAspThrSerArgProIleArgAlaAspIleLysGlySerArgLeuSerLeuSerGly
GlyAlaGluValValAspThrAlaAspLeuMetLeuAspGlyThrGlyVal-645
647-HisArgIleArgThr-651
656-ThrLeuAspGlyLysProPheLysPheAspLeuAspAlaSerGlyGlyIleAsnArgGluLeuThrArgTrp
LysGlySerIle-683
696-LeuGlnAsnArgMetThrLeu-702
704-AlaGlyAlaGluArgValAla-710
729-SerTrpAspLysLysThrGlyIleSerAlaLysGlyGlyAla-742
764-LeuAsnGlyAspTrp-768
772-TyrGlyArgAsnAlaArgGly-778
782-IleSerArgGlnSerGlyAspAlaValLeu-791
803-SerLeuLysThrArgPheGlnAsnAspArgIleGly-814
817-LeuAspGlyGlyAlaArgPheGlyArgIleAsnAlaAspLeuAspIle-832
844-ProLeuGlyGlyArgIleThr-850
882-GlyArgValGlySerProSerVal-889
893-ValAsnGlySerSerAsnTyrGlyLysIleAsnGly-904
908-ValGlyGlnSerArgSerPheAspThrAlaProLeuGlyGlyArgLeuAsn-924
941-GlnThrValLysGlySerLeu-947
956-SerIleAlaAspProHisLeuGlyGly-964
966-IleAsnGlyAspLysLeuTyrTyrArgAsnGlnThr-977
982-LeuAspAsnGlySerLeuArg-988
991-IleAlaGlyArgLysTrpVal-997
1001-LeuLysPheArgHisGluGlyThrAlaGluLeuSerGly-1013
1015-ValGlyMetGluAsnSerGlyProAspValAspIle-1026
1031-AspLysTyrArgIleLeuSerArgProAsnArgArgLeuThr-1044
1047-GlyAsnThrArgLeuArgTyrSerProGlnLysGlyIle-1059
1065-IleLysThrAspGlnGlyLeuPheGlySerGlnLysSerSerMetProSerValGlyAspAspVal-1086
1091-GluValLysLysGluAlaAla-1097

1109-AspLeuAsnAspGlyIleArg-1115
 1134-GlnSerGlyGlySerValArgGlyValGly-1143
 1146-ArgValIleLysGlyArgTyrIleAlaTyrGlyGlnAspLeuAspIleThrLysGlyThr-1165
 1171-ProLeuAsnAspProAsnLeuAsnIleArgAlaGluArgArgLeuSerProValGly-1189
 1197-SerLeuAsnSerProArgIle-1203
 1207-AlaAsnGluProMetSerGluLysAspLysLeu-1217
 1225-AlaGlySerGlySerSerGlyAspAsnAlaAla-1235
 1246-GlyGlnIleAsnAspArgIleGlyLeu-1254
 1256-AspAspLeuGlyPheThrSerLysArgSerArgAsnAlaGlnThrGlyGluLeuAsnProAlaGlu-1277
 1283-GlyLysGlnLeuThrGlyLys-1289
 1299-SerSerAlaGluGlnSerVal-1305
 1321-IleGlySerArgSerSerGlyGlyGluLeu-1330
 1335-ArgPheAspArgPheSerGlySerAspLysLysAspSerAlaGlyAsnSerLysGlyLys-1354

Hydrophilic Regions - Hopp-Woods

56-PheAspGlyAspAsnTrpSerIleGluThrGluGlyAlaAspLeuLysIleSerArg-74
 83-GluLeuMetArgArgSerLeuHis-90
 105-ProThrProProLysGluGluArgProPro-114
 130-AspArgPheGluThrGlyLys-136
 141-LysAlaPheAspIlys-145
 151-GluArgLeuAspAla-155
 157-TyrArgTyrAspArgLysGlyHisArgLeuAspLeuLysAlaAlaAsp-172
 200-GlyGlyLeuGluGlyLysThrIle-207
 215-GlySerLeuLysAspValArgAla-222
 244-GluSerLeuAspIlysThrLeuGlu-251
 292-GlySerLeuAspLeuGluAsnThrLys-300
 302-GlyPheAlaAspArgAsnGlyIlePro-310
 320-IleArgGlnAspGly-324
 343-LeuSerGlyLysIleAspThrGluLysAspIleLeu-354
 364-GlyAlaGluAspValLeu-369
 373-PheLysGlyArgLeuAspGly-379
 401-AlaArgThrAspGly-405
 412-AspProAlaAsnGlyGlnArgLysLeuVal-421
 442-LeuPhelysAspArgLeuLeuLysLeuAspIleArgSerArgAlaPheAspProSerArgIleAspPro-46
 4
 480-GluLeuAlaLysGluLysPheThrGly-488
 508-IleValTyrGlySerArgHisLeuPro-516
 522-LeuArgLeuGlyArgAsnIleIleLysThrAspGlyGlyPheGlyLysLysGlyAspArgLeuAsn-543
 570-GlyAspLeuAspGlyGlyIleArgThrPheGluThrAspLeuSerGlyAlaAla-587
 594-LysAlaAlaAspIleArgSer-600
 607-GlySerProAspThrSerArgProIleArgAlaAspIleLysGlySerArgLeuSerLeu-626
 631-GluValValAspThrAlaAspLeuMetLeu-640
 647-HisArgIleArgSer-651
 657-LeuAspGlyLysProPheLysPheAspLeuAspAla-668
 670-GlyGlyIleAsnArgGluLeuThrArgTrpLysGly-681
 704-AlaGlyAlaGluArgValAla-710
 729-SerTrpAspIlysThrGlyIleSerAlaLysGlyGlyAla-742
 783-SerArgGlnSerGly-787
 806-ThrArgPheGlnAsnAspArgIle-813
 819-GlyGlyAlaArgPheGlyArgIleAsnAlaAspLeuAspIle-832
 1001-LeuLysPheArgHisGluGlyThrAlaGluLeu-1011
 1017-MetGluAsnSerGlyProAspValAspIle-1026
 1031-AspLysTyrArgIleLeuSerArgProAsnArgArgLeuThr-1044
 1049-ThrArgLeuArgTyrSerPro-1055
 1065-IleLysThrArgGln-1069

1075-GlnLysSerSerMet-1079
 1091-GluValLysLysGluAlaAla-1097
 1109-AspLeuAsnAspGlyIleArg-1115
 1146-ArgValIleLysGlyArgTyrLysAlaTyrGlyGlnAspLeuAspIleThrLys-1163
 1179-IleArgAlaGluArgArgLeuSer-1186
 1209-GluProMetSerGluLysAspLysLeu-1217
 1225-AlaGlySerGlySerSerGlyAspAsnAlaAla-1235
 1248-IleAsnAspArgIleGlyLeu-1254
 1259-GlyPheThrSerLysArgSerArgAsnAlaGlnThrGlyGluLeuAsnPro-1275
 1300-SerAlaGluGlnSerVal-1305
 1321-IleGlySerArgSerSerGlyGly-1328
 1335-ArgPheAspArgPheSerGlySerAspLysAspSerAlaGlyAsnSerLysGlyLys-1354
a286

AMPHI Regions - AMPHI

69-GluIleLysAspMetVal-74
 102-ProAspAsnValLysThr-107
 145-ValAlaIleLeuGlyAsp-150
 157-LeuAlaGluTyrTyrArgAsnAlaLeuGluAsnTrpGlnGlnProValGlySer-174
 198-ProLeuAlaLysLeuGlyAsn-204
 238-ThrGlnArgTyrProGluGlnIleValSerGlyLeuAlaArgPheGlnProGlyThr-256
 326-AspTyrTyrAsnLeuPheAsnLys-333
 354-IleSerGlnProArg-358
 375-ThrThrGlnAsnLeu-379
 428-ThrAlaSerTrpLysArgGlnLeuLeu-436
 455-ThrLeuGlyAlaPhe-459
 513-GlyAlaSerSerVal-517
 555-LeuSerGlyAlaValPheHisAspMetGlyAspAlaAlaAlaAsn-569
 584-ArgTrpPheSerProLeu-589

Antigenic Index - Jameson-Wolf

1-MetHisAspThrArgThrMetMet-8
 30-AlaAspLeuSerGluAsnLysAla-37
 43-PheLysAsnLysSerProAspThrGluSerValLysLeuLysProLysPheProVal-61
 63-IleAspThrGlnAspSerGluIleLysAspMetValGluGluHisLeu-78
 83-GlnGlnGlnGluGluValLeuAspLysGluGlnThr-94
 97-LeuAlaGluGluAlaProAspAsnValLysThrMetLeuArgSerLysGlyTyrPheSerSerLysValSerL
 euThrGluLysAspGlyAla-127
 133-ThrProGlyProArgThrLysIle-140
 151-IleLeuSerAspGlyAsnLeuAlaGluTyrTyrArgAsnAlaLeuGluAsnTrpGln-169
 172-ValClySerAspPheAspGlnAspSerTrpGluAsnSerLysThrSerVal-188
 192-ValThrArgLysIlaTyrPro-198
 201-LysLeuGlyAsnThrArgAlaAlaValAsnProAspThrAlaThrAla-216
 223-AspSerGlyArgProIleAla-229
 234-GluIleThrGlyThrGlnArgTyrProGluGlnIle-245
 252-PheGlnProGlyThrProTyrAspLeu-260
 270-LeuGluGlnAsnGlyHisTyrSerGly-278
 283-AlaAspPheAspArgLeuGlnGlyAspArgValProVal-295
 298-SerValThrGluValLysArgHisLysLeuGluThrGlyIleArgLeuAspSerGluTyrGlyLeuGlyGly
 -321
 342-AspMetAspLysTyrGluThr-348
 355-SerGlnProArgAsnTyrArgGlyAsnTyrTrp-365
 368-AsnValSerTyrAsnArgSerThrThrGlnAsnLeuGluLysArgAlaPheSerGlyGly-387
 391-ValArgAspArgAlaGlyIleAspAlaArgLeuGly-402
 405-PheLeuAlaGluGlyArgLysIleProGlySerAspIleAspLeuGlyAsnSerHisAla-424
 430-SerTrpLysArgGlnLeu-435

441-HisProGluAsnGlyHisTyrLeuAspGlyLysIle-452
 468-ThrSerAlaArgAlaGly-473
 476-PheThrProGluAsnLysLysLeu-483
 496-ValAlaArgAspAsnAlaAsnValPro-504
 509-PheArgSerGlyGlyAlaSerSerValArgGlyTyrGluLeuAspSer-524
 534-ValLeuProGluArgAlaLeu-540
 562-AspMetGlyAspAla-566
 568-AlaAsnPhelysArgMetLysLeuLysHisGlySerGlyLeu-581
 598-TyrGlyHisSerAspLysLysIleArg-606

Hydrophilic Regions - Hopp-Woods

1-MetHisAspThrArgThrMetMet-8
 30-AlaAspLeuSerGluAsnLysAla-37
 44-LysAsnLysSerProAspThrGluSerProValLysLeuLysProLysPheProVal-61
 63-IleAspThrGlnAspSerGluIleLysAspMetValGluGluHisLeu-78
 84-GlnGlnGluGluValLeuAspLysGluGlnThr-94
 97-LeuAlaGluGluAlaProAspAsnValLysThrMetLeuArgSer-111
 119-ValSerLeuThrGluLysAspGlyAla-127
 134-ProGlyProArgThrLysIle-140
 174-SerAspPheAspGlnAspSerTrpGluAsnSerLysThr-186
 192-ValThrArgLysAlaTyrPro-198
 206-ArgAlaAlaValAsnProAspThrAlaThr-215
 239-GlnArgTyrProGlu-243
 283-AlaAspPheAspArgLeuGlnGlyAspArgValProVal-295
 298-SerValThrGluValLysArgHisLysLeuGluThrGlyIleArgLeuAspSerGluTyr-317
 342-AspMetAspLysTyrGluThr-348
 373-AргSerThrThrGlnAsnLeuGluLysArgAlaPhe-384
 392-ArgAspArgAlaGlyIleAspAlaArgLeuGly-402
 405-PheLeuAlaGluGlyArgLysIleProGlySerAspIleAspLeu-419
 478-ProGluAsnLysLysLeu-483
 496-ValAlaArgAspAsnAlaAsn-502
 518-ArgGlyTyrGluLeuAspSer-524
 534-ValLeuProGluArgAlaLeu-540
 562-AspMetGlyAspAla-566
 568-AlaAsnPhelysArgMetLysLeuLysHis-577
 600-HisSerAspLysLysIleArg-606

a287**AMPHI Regions - AMPHI**

29-LysSerAlaAspThrLeuSerLysProAlaAla-39
 77-GlyGlyGlnAspMet-81
 109-AsnAspMetProGlnAsn-114
 131-MetProThrArgAspMetGlyAsnGlnAlaProAspAlaGlyGluSerAlaGlnProAlaAsnGlnProAsp
 MetAlaAsnAlaAlaAspGlyMet-162
 171-GluAsnAlaGlyAsnThrAlaAspGlnAlaAlaAsnGlnAlaGluAsn-186
 192-SerGlnAsnProAla-196
 206-GlyGlySerAspPhe-210
 213-IleAsnValAlaAsnGly-218
 256-LeuSerAspGluGluLysIleAsnLysTyrLysLys-267
 306-PheArgArgSerAlaArg-311
 419-LysSerValAspGlyIleIleAspSer-427
 447-PhelysGlyThrTrpThr-452

459-ValSerGlyArgPheTyr-464

Antigenic Index - Jameson-Wolf

17-AlaCysGlyGlyGlyGlyGlySerProAspValLysSerAlaAspThrLeuSerLysProAla-38
 42-ValThrGluAspValGlyGluGluValLeuProLysGluLysLysAspGluGluAlaValSerGlyAlaProG
 lnAlaAspThrGlnAspAlaThrAlaGlyLysGlyGlyGlnAspMet-81
 85-SerAlaGluAsnThrGlyAsnGlyGlyAlaAlaThrThrAspAsnProGluAsnLysAspGluGlyProGlnA
 snAspMetProGlnAsnAlaAlaAspThrAspSerSerThrProAsnHisThrProAlaProAsnMetProThrAr
 gAspMetGlyAsnGlnAlaProAspAlaGlyGluSerAlaGlnProAlaAsnGlnProAspMetAlaAsnAlaA
 AspGlyMetGlnGlyAspAspProSerAlaGlyGluAsnAlaGlyAsnThrAlaAspGlnAlaAlaAsnGlnAlaG
 luAsnAsnGlnValGlyGlySerGlnAsnProAlaSerSerThrAsnProAsnAlaThrAsnGlyGlySerAspPh
 eGlyArg-212
 214-AsnValAlaAsnGlyIleLysLeuAspSerGlySerGluAsnVal-228
 232-HisCysLysAspLysValCysAspArgAspPheLeuAspGluGluAlaProProLysSerGluPheGluLys
 LeuSerAspGluGlyIleAsnLysTyrLysLysAspGluGlnArgGluAsnPhe-274
 278-ValAlaAspArgValGluLysAsnGlyThrAsnLys-289
 293-IleTyrLysAspLysSerAlaSerSerSerAlaArgPheArgArgSerAlaArgSerArgArgSerLeu
 ProAla-318
 332-IleValAspGlyGluAla-337
 342-GlyHisSerGlyAsn-346
 349-AlaProGluGlyAsnTyrArgTyrLeu-357
 360-GlyAlaGluLysLeuAspGlyGlySer-368
 374-GlnGlyGluProAlaLysGlyGluMet-382
 397-HisMetGluAsnGlyArgProSerProSerGlyGlyArgArgPheAlaAla-412

 414-ValAspPheGlySerLysSerValAspGlyIleIleAspSerGlyAspAspLeuHisMetGlyThrGlnLys
 Phe-438
 442-IleAspGlyAsnGlyPheLysGlyThrTrpThrGluAsnGlyGlyGlyAspValSerGly-461
 463-PheTyrGlyProAlaGlyGluGluValAlaGlyLysTyrSerTyrArgProThrAspAlaGluGlyGly
 Phe-487
 491-AlaGlyLysLysGluGlnAsp-497

Hydrophilic Regions - Hopp-Woods

22-GlyGlyGlySerProAspValLysSerAlaAspThrLeuSerLysProAla-38
 42-ValThrGluAspValGlyGluGluValLeuProLysGluLysLysAspGluGluAlaValSer-62
 65-ProGlnAlaAspThrGlnAspAlaThrAlaGlyLysGlyGlyGlnAsp-80
 85-SerAlaGluAsnThrGly-90
 95-AlaThrThrAspAsnProGluAsnLysAspGluGlyProGlnAsnAspMetProGlnAsnAlaAlaAspThrA
 spSerSerThr-122
 131-MetProThrArgAspMetGlyAsnGlnAlaProAspAlaGlyGluSerAlaGln-148
 151-AsnGlnProAspMetAlaAsnAlaAlaAspGlyMetGlnGlyAspAspProSerAlaGlyGluAsnAlaGly
 AsnThrAlaAspGlnAlaAlaAsnGlnAlaGluAsnAsnGln-188
 193-GlnAsnProAlaSer-197
 206-GlyGlySerAspPheGlyArg-212
 219-IleLysLeuAspSerGlySerGlu-226
 232-HisCysLysAspLysValCysAspArgAspPheLeuAspGluGluAlaProProLysSerGluPheGluLys
 LeuSerAspGluGlyIleAsnLysTyrLysLysAspGluGlnArgGluAsnPhe-274
 278-ValAlaAspArgValGluLysAsnGlyThr-287
 294-TyrLysAspLysSerAlaSerSerSerAlaArgPheArgArgSerAlaArgSerArgArgSerLeuPro
 -317
 332-IleValAspGlyGluAla-337
 360-GlyAlaGluLysLeuSer-365
 374-GlnGlyGluProAlaLysGlyGluMet-382
 399-GluAsnGlyArgProSerProSerGlyGly-408

 414-ValAspPheGlySerLysSerValAspGlyIleIleAspSerGlyAspAspLeuHis-432
 455-GlyGlyGlyAspValSer-460

-480-

467-AlaGlyGluGluValAlaGly-473

475-TyrSerTyrArgProThrAspAlaGluLysGlyGly-486
491-AlaGlyLysLysGluGlnAsp-497**a288**

AMPHI Regions - AMPHI
 7-ValSerArgValLeu-11
 54-IleValThrLysCysAla-59
 61-ArgProTyrArgThrPheSerProLeuProVal-71
 97-HisSerThrLeuArg-101
 150-AlaLeuPheGlnAlaGlyPheAspLysAlaValGln-161

Antigenic Index - Jameson-Wolf

2-HisThrGlyGlnAla-6
 28-AsnLeuProGluArgSerAlaGlySer-36
 58-CysAlaValArgProTyrArgThrPheSerPro-68
 72-LeuProLysGlnProSerAla-78
 89-LeuProArgProAlaValAsnArgHisSerThrLeuArgSerProAspPheProProArgMet-109
 113-IleArgGlyAspCysLeuPro-119
 126-IleIleThrArgAsnAlaLysMetProSerGluThrValGlnValSerAspGlyIleGlnProLys-147
 155-GlyPheAspLysAlaVal-160

Hydrophilic Regions - Hopp-Woods

28-AsnLeuProGluArgSerAla-34
 58-CysAlaValArgPro-62
 98-SerThrLeuArgSerProAspPheProPro-107
 113-IleArgGlyAspCys-117
 126-IleIleThrArgAsnAlaLysMetProSerGluThrValGlnVal-140
 155-GlyPheAspLysAlaVal-160

a292

AMPHI Regions - AMPHI
 7-LysIleLeuThrProPheThrValLeuProLeu-17
 40-GlyLysSerValAla-44
 62-ValLeuSerValSerGlu-67
 69-ProValLysGlyIleTyrGlu-75
 110-GluArgAlaAlaAspLeu-115
 124-ProLeuAspLysAlaIleLysGluValArgGly-134
 150-PheCysLysArgLeuGluHisGluPheGluLysMetThrAspValThr-165
 195-LysAlaTrpThrAspTrpMetArg-202
 212-IleCysAspAsnProVal-217

Antigenic Index - Jameson-Wolf

1-MetLysThrLysLeu-5
 23-ThrProValSerAsnAlaAsnAlaGluProAlaValLysAlaGluSerAlaGlyLysSerVal-43
 47-LeuLysAlaArgLeuGluLysThrTyrSerAlaGlnAspLeuLys-61
 66-SerGluThrProValLysGlyIle-73
 85-TyrThrAspAlaGluGlyGlyTyr-92
 99-IleAsnIleAspThrArgLysAsnLeuThrGluGluArgAlaAlaAspLeuAsnLys-117
 124-ProLeuAspLysAlaIleLysGluValArgGlyAsnGlyLysLeuLysVal-140
 142-ValPheSerAspProAspCysProPhe-150
 152-LysArgLeuGluHisGluPheGluLysMetThrAsp-163
 177-HisProAspAlaAlaArgLysAla-184
 189-CysGlnProAspArgAlaLysAla-196
 200-TrpMetArgLysGlyLysPheProVal-208

210-GlySerIleCysAspAsnProValAlaGluThrThrSerLeuGlyGlu-225
 237-PheProAsnGlyArgSerGlnSerGlyTyrSerPro-248
 250-ProGlnLeuGluGluIleIleArgLysAsnGln-260

Hydrophilic Regions - Hopp-Woods

1-MetLysThrLysLeu-5
 28-AlaAsnAlaGluProAlaValLysAlaGluSerAlaGlyLysSerVal-43
 47-LeuLysAlaArgLeuGluLysThrTyrSer-56
 99-IleAsnIleAspThrArgLysAsnLeuThrGluGluArgAlaAlaAspLeuAsnLys-117
 124-ProLeuAspLysAlaIleLysGluValArgGlyAsnGlyLysLeuLys-139
 144-SerAspPrcAspCysProPhe-150
 152-LysArgLeuGluHisGluPheGluLysMetThrAsp-163
 179-AspAlaAlaArgLysAla-184
 190-GlnProAspArgAlaLysAla-196
 200-TrpMetArgLysGlyLysPhe-206
 240-GlyArgSerGlnSer-244
 250-ProGlnLeuGluGluIleIleArgLysAsnGln-260
a294
AMPHI Regions - AMPHI
 27-ArgPheProAlaAlaPheArgArgTyrSer-36
 45-LysProAlaGlyThr-49
 51-TrpHisArgValArgArgPheLysSerAsnArgArgThr-63
 65-GlyGlyLysProLeuLysThrTyrArg-74
 92-AsnIleAlaGluArgAlaArgGluSerProArgArgTyrGlyLysArgTyrAlaAspIleGlyAspAsp-114
 133-AlaValAlaHisIleValHisLeu-140
 176-AlaMetSerTyrArg-180
 206-SerIleLeuGlyGluProPheAlaThrSerPheGly-217
 227-AlaPheSerValLeuAlaHisPhe-234
 247-ThrValGlyTrpSerLysTyrIleHisThrVal-257

Antigenic Index - Jameson-Wolf

20-AlaValArgThrSerSerAsnArgPhe-28
 32-PheArgArgTyrSerAlaPheArg-39
 44-ProLysProAlaGlyThrProTrpHisArgValArgArgPheLysSerAsnArgArgThrArgGlyGlyLysP
 roLeuLysLysThrTyrArgProArgArgAlaGluCysArgCysArgArgAlaArgThr-87
 93-IleAlaGluArgAlaArgGluSerProArgArgTyrGlyLysArgTyrAlaAspIleGlyAspAspSerAspT
 hrIleArg-119
 121-ArgValPheArgLeuGluTyr-127
 161-HisThrGlyArgValSerCysGluAlaArgArgGluValGluLysAlaMetSer-178
 240-LysMetAlaArgSer-244

Hydrophilic Regions - Hopp-Woods

20-AlaValArgThrSerSerAsnArg-27
 52-HisArgValArgArgPheLysSerAsnArgArgThrArgGlyGlyLysProLeuLysLysThrTyrArgProA
 rgArgAlaGluCysArgCysArgArgAlaArgThr-87
 93-IleAlaGluArgAlaArgGluSerProArgArgTyrGlyLysArgTyrAlaAspIleGlyAspAspSerAspT
 hrIleArg-119
 121-ArgValPheArgLeuGluTyr-127
 165-ValSerCysGluAlaArgArgGluValGluLysAlaMetSer-178
a295

AMPHI Regions - AMPHI

79-PheArgGlnProArg-83
 112-ArgPheArgGlnPro-117
 130-AlaPheLeuHisGlnIle-135
 175-AsnLeuArgGlyPhePro-180

188-HisGlnGlnArgArgIleGlyLysThrLeuProGlnLeu-200
 232-ThrLeuAlaProMetArgProIleCysArgGlyThrSerGly-245
 262-TyrIleIleLysProLeuGluHis-269

Antigenic Index - Jameson-Wolf
 4-MetAlaArgHisAspAspGlnGlnGly-12
 18-LeuProArgArgGlnGln-23
 49-PheLysLeuProArgGlnArgPheHisLeu-58
 73-HisGlyCysArgAlaGlnPheArgGlnProArgArgIleArgLeu-87
 91-GlnThrAlaArgGlnArgSerGlyGlyArgThrAspGlnAlaAla-105
 114-PheArgGlnProArgIleArgGlnLysGlnArgHisThrArg-127
 136-GlyProAspPheGly-140
 143-GlnAsnAlaGluHisArgAla-149
 170-CysIleArgGlyLysGlnAsnLeuArgGlyPheProSerArgArgGlyHisLeuArgHisGlnGlnArgArgIle
 GlyLysThrLeu-197
 205-LeuGlyGlyThrArgPheProAspArgAsnGlyValTyrProAsnArgAlaGlyAsnGlyIleArgIleArg
 Leu-229
 238-ProIleCysArgGlyThrSerGly-245
 252-ProTyrProTyrArgArgLysGlnProGlnTyr-262
 273-SerCysLysThrAsnAlaValArgThrValArgThrAlaPheArgGlnArgAsnGlnIleSer-293

Hydrophilic Regions - Hopp-Woods

5-AlaArgHisAspAspGlnGlnGly-12
 18-LeuProArgArgGlnGln-23
 77-AlaGlnPheArgGlnProArgArgIleArgLeu-87
 93-AlaArgGlnArgSerGlyGlyArgThrAspGlnAlaAla-105
 117-ProArgIleArgGlnLysGlnArgHisThrArg-127
 145-AlaGluHisArgAla-149
 170-CysIleArgLysGlnAsnLeu-176
 179-PheProSerArgArgGlyHisLeuArgHisGlnGlnArgArgIleGlyLys-195
 209-ArgPheProAspArgGly-215
 225-IleArgIleArgLeu-229
 238-ProIleCysArgGlyThr-243
 254-ProTyrArgArgLysGlnPro-260
 280-AргThrValArgThrAlaPheArgGlnArgAsnGlnIle-292
 a297
AMPHI Regions - AMPHI
 35-ArgThrGluArgVal-39
 69-GlnProGlyAspSerLeuAlaAspValLeuAla-79
 86-AspGluIleAlaArgIleThrGluLysTyr-95
 157-LeuProThrLeuArg-161
 199-LeuLysGluGlyAspAla-204
 272-LeuValTyrThrArgIleSerSer-279
 333-HisAlaAsnGlyValGluThrLeuTyrAlaHisLeuSerAlaPheSer-348

Antigenic Index - Jameson-Wolf

8-AlaLysHisArgLysTyrAla-14
 32-SerThrGluArgThrGluArgValArgProGlnArgValGluGlnLysLeuPro-49
 52-SerTrpGlyGlySerGly-57
 67-AlaValGlnProGlyAspSerLeuAla-75
 78-LeuAlaArgSerGlyMetAlaArgAspGluIleAlaArgIleThrGluLysTyrGlyGlyGluAlaAspLeuA
 rgHisLeuArgAlaAspGlnSerVal-110
 115-GlyGlyAspGlyGlyAlaArgGluVal-123
 127-ThrAspGluAspGlyGlyArgAsnLeuValAlaLeuGluLysLysGlyGlyIleTrpArgArgSerAlaSer
 GluAlaAspMetLysVal-156

167-ThrSerAlaArgGlySerLeuAlaArgAlaGluValProValGluIleArgGluSerLeuSer-187
 194-PheSerLeuAspGlyLeuLysGluGlyAspAlaVal-205
 228-GluValValLysGlyGlyThrArgHis-236
 240-TyrTyrArgSerAspLysGluGlyGlyGlyGlyAsnTyrTyrAspGluAspGlyArgValLeuGlnGlu
 LysGlyGlyPheAsn-268
 276-ArgIleSerSerProPheGlyTyr-283
 295-HisThrGlyIleAspTyrAla-301
 303-ProGlnGlyThrProValArgAlaSerAlaAspGly-314
 318-PheLysGlyArgLysGlyGlyTyrGly-326
 333-HisAlaAsnGlyValGlu-338
 350-AlaGluGlyAsnValArgGlyGlyGlu-358
 365-SerThrGlyArgSerThrGlyProHisLeu-374
 376-TyrGluAlaArgIleAsnGlyGlnProValAsn-386
 393-ProThrProGluLeuThrGlnAlaAspLysAlaAla-404
 408-GlnLysGlnLysAlaAspAlaLeu-415
 426-ValSerGlnSerAsp-430

Hydrophilic Regions - Hopp-Woods

8-AlaLysHisArgLysTyrAla-14
 32-SerThrGluArgThrGluArgValArgProGlnArgValGluGlnLysLeu-48
 68-ValGlnProGlyAspSerLeuAla-75
 82-GlyMetAlaArgAspGluIleAlaArgIleThrGluLysTyrGlyGlyGluAlaAspLeuArgHisLeuArgA
 laAspGln-108
 117-AspGlyGlyAlaArgGlu-122
 127-ThrAspGluAspGlyGluArgAsnLeuValAlaLeuGluLysLysGlyGlyIleTrpArgArgSerAlaSer
 GluAlaAspMetLysVal-156
 167-ThrSerAlaArgGlySerLeuAlaArgAlaGluValProValGluIleArgGluSerLeu-186
 194-PheSerLeuAspGlyLeuLysGluGlyAspAlaVal-205
 228-GluValValLysGlyGlyThrArg-235
 242-ArgSerAspLysGluGlyGlyTyr-249
 253-TyrTyrAspGluAspGlyArgValLeuGlnGluLysGlyGlyPhe-267
 306-ThrProValArgAlaSerAla-312
 319-LysGlyArgLysGlyGlyTyr-325
 350-AlaGluGlyAsnValArgGlyGlyGlu-358
 366-ThrGlyArgSerThrGly-371
 378-AlaArgIleAsnGly-382
 396-GluLeuThrGlnAlaAspLysAlaAla-404
 408-GlnLysGlnLysAlaAspAlaLeu-415
a298

AMPHI Regions - AMPHI

6-SerLeuPheAlaSerIleLeuMetSerAlaLeuIleAla-18
 26-IleAsnAlaTyrTrpGlnGln-32
 42-ProLeuAlaAlaTyr-46
 62-LeuSerAspGlyIleLysAlaPhe-69
 82-GlySerAlaAspMetPro-87
 134-ValGlnLysSerLeuLys-139
 157-SerTyrProSerPheAspTrpProLysThrIleGluGluThrLeuLysLysHisProGlu-177
 188-AsnAspProTrpAsp-192
 208-AlaGlnGluTyrLeuLysArgValAspArgIleLeuGluAlaAlaHis-223
 245-GlnMetArgTyrLeuAspLysLeuLeuSerGluTyrLeu-257
 276-ArgTyrThrAspSer-280
 308-AlaLysIleMetGluLys-313

Antigenic Index - Jameson-Wolf

22-SerGlnAsnProIleAsnAlaTyr-29

34-TyrHisArgAsnSerProLeuGluPro-42
 47-GlyTrpTrpArgSerGlyAlaAlaLeuGlnGlu-57
 70-LeuSerGlyGluThrProProThrAlaGlnAspGlyGlySerAlaAspMetProSerGluAlaAlaAlaProGluThrAlaProGlnThrGlyGluThrGluTrpLysGlnAsnThrGlu-109
 114-ArgThrGlyAspIys-118
 136-LysSerLeuLysGlnGlnTyrGlyIleGluSerValAsnLeuSerLysGlnSerThrGly-155
 162-PheAspTrpProLysThrIleGluGluThrLeuLysLysHisProGlu-177
 186-GlyProAsnAspProTrp-191
 194-ProValGlyLysArgTyrLeu-200
 203-AlaSerAspGluTrpAla-208
 211-TyrLeuLysArgValAspArgIleLeuGlu-220
 236-TyrMetLysLysAlaLysLeuAspGlyGlnMetArgTyrLeuAsp-250
 270-LeuSerGlyGlyLysAspArgTyrThrAspSerValAsnValAsnGlyLysProValArgTyrArgSerLysAspGlyIle-296
 318-ProSerThrGlnProSerSerThrGlnPro-327

Hydrophilic Regions - Hopp-Woods

73-GluThrProProThrAlaGlnAspGlyGlySerAlaAspMetProSerGluAlaAlaAlaProGluThrAlaProGlnThrGlyGluThrGluTrpLysGlnAsnThrGlu-109
 148-AsnLeuSerLysGlnSerThr-154
 166-LysThrIleGluGluThrLeuLysLysHisProGlu-177
 211-TyrLeuLysArgValAspArgIleLeuGlu-220
 236-TyrMetLysLysAlaLysLeuAspGlyGlnMetArgTyrLeuAsp-250
 271-SerGlyLysAspArgTyrThrAsp-279
 281-ValAsnValAsnGlyLysProValArgTyrArgSerLysAspGlyIle-296
 319-SerThrGlnProSerSerThrGlnPro-327

a299

AMPHI Regions - AMPHI

54-AlaSerProTrpMetLysLysLeuGlnSerValAlaGlnGlySer-68
 71-ThrPheArgIleLeuGlnIleGly-78
 85-AspPhePheThrAspSerLeuArgLysArgLeuGlnLysThrTrpGly-100
 238-GlnLeuThrGlnTrpSerLysTrp-245
 247-AlaAspArgMetAsnAspLeuAlaGlnThr-256
 281-GluGlnLysTrpLeuAspThrValArgGlnIleArgAspSerLeu-295
 307-GluSerLeuLysAsnThrLeu-313
 322-ArgLeuThrGluValGlnGlnMetGlnArgArgIleAlaArgGln-336
 375-TyrGlnArgSerAlaGluMetLeuAlaAspSerLeuGluGluLeuValArgSerAlaAlaIleArg-396

Antigenic Index - Jameson-Wolf

1-MetAsnProLysHis-5
 35-ProSerAlaProTyrThrAspThrAsnGlyLeu-45
 48-AspTyrGlyAsnAlaSerAlaSerProTrpMetLysLysLeuGln-62
 65-AlaGlnGlySerGlyGluThr-71
 78-GlyAspSerHisThrAlaGlyAspPheThrAspSerLeuArgLysArgLeuGlnLysThrTrpGlyAspGlyGly-103
 110-AlaAsnValLysGlyGlnArg-116
 121-ArgHisAsnGlyAsnTrpGlnSerLeuThrSerArgAsnAsnThrGlyAspPheProLeu-140
 157-AlaSerAspGlyIleAlaSerLysGlnArgVal-167
 184-GlyAsnThrValSerAlaAsnGlyGlyGly-193
 221-GluAsnProAlaGlyGly-226
 241-GlnTrpSerLysTrpArgAlaAspArgMetAsnAspLeuAlaGlnThrGlyAla-258
 266-GlyThrAsnGluAlaPheGlyAspAsnIleAspIleAlaAspThrGluGlnLysTrp-284
 286-AspThrValArgGlnIleArgAspSerLeuPro-296
 305-AlaProGluSerLeuLysAsnThr-312
 319-ArgProValArgLeuThrGluValGlnGlnMetGlnArgArgIleAlaArgGlnGlyGlnThr-339

361-GlyTrpAlaAlaLysAspGlyVal-368
 371-SerAlaLysGlyTyrGlnArgSerAlaGluMetLeuAlaAspSerLeuGluGluLeuValArg-391
 393-AlaAlaIleArgGln-397

Hydrophilic Regions - Hopp-Woods

67-GlySerGlyGluThr-71
 90-SerLeuArgLysArgLeuGlnLysThrTrpGly-100
 112-ValllysGlyGlnArg-116
 130-ThrSerArgAsnAsnThrGly-136
 159-AspglyIleAlaSerLysGlnArgVal-167
 245-TrpArgAlaAspArgMetAsnAsp-252
 270-AlaPheGlyAspAsnIleAspIleAlaAspThrGluGlnLysTrp-284
 288-ValArgGlnIleArgAspSerLeuPro-296
 319-ArgProValArgLeuThrGlu-325
 327-GlnGlnMetGlnArgArgIleAlaArgGlnGly-337
 363-AlaAlaLysAspGlyVal-368
 374-GlyTyrGlnArgSerAlaGluMetLeuAlaAspSerLeuGluGluLeuValArg-391
 393-AlaAlaIleArgGln-397

a302**AMPHI Regions - AMPHI**

20-AspGlyArgPheLeuArgThrValGluTrpLeuGlyAsnMetLeuProHisPro-37
 81-ValValSerLeuLeuAspAlaAspGlyLeuIleLysIleLeuThrHisThrValLysAsnPheThrGlyPheA
 laProLeuGlyThrValLeuValSerLeu-114
 127-SerAlaLeuMetArg-131
 176-GlyArgHisProLeuAlaGlyLeuAlaAlaAlaPheAlaGlyValSerGly-192
 201-GlyThrIleAspProLeuLeuAlaGlyIleThrGlnGlnAla-214
 239-VallleAlaLeuIleGly-244
 271-ArgHisSerAsnGlnIle-276
 294-LeuSerAlaIleLeuAlaTrp-300
 308-IleLeuArgHisProGluThrGly-315
 341-TyrGlyArgValThrArgSerLeuArgGlyGluGlnGluValValAsnAlaMetAlaGluSerMetSer-36
 3
 378-PheValAlaPhePheAsnTrpThrAsnIleGlyGlnTyrIle-391
 448-AlaProGluValIleGlnAlaAlaTyrArgIleGlyAspSerValThrAsnIleIleThrProMetMetSer
 TyrPheGlyLeuIleMetAla-478
 505-IleAlaTrpIleAlaLeuPheCysIle-513

Antigenic Index - Jameson-Wolf

8-LysGluLysGlnMetSerGlnThrAspThrGlnArgAspGlyArgPhe-23
 61-SerValProAspProArgProValGlyAlaLysGlyArgAlaAspAspGlyLeu-78
 85-LeuAspAlaAspGlyLeu-90
 119-IleAlaGluLysSerGly-124
 134-LeuThrLysSerProArgLysLeuThr-142
 152-LeuSerAsnThrAlaSerGlu-158
 175-LeuGlyArgHisProLeu-180
 250-LysIleValGluProGlnLeuGlyProTyrGlnSerAspLeuSerGlnGluGluLysAspIleArgHisSer
 AsnGluIleThrProLeuGluTyrLys-282
 304-ProAlaAspGlyIleLeuArgHisProGluThrGlyLeuValSer-318
 343-ArgValThrArgSerLeuArgGlyGluGlnGluVal-354
 402-ValGlyLeuGly-406
 482-LysTyrLysLysAspAlaGlyVal-489

Hydrophilic Regions - Hopp-Woods

8-LysGluLysGlnMetSerGlnThrAspThrGlnArgAspGlyArgPhe-23
 63-ProAspProArgProValGlyAlaLysGlyArgAlaAspAspGlyLeu-78

85-LeuAspAlaAspGlyLeu-90
 119-IleAlaGluLysSerGly-124
 136-LysSerProArgLysLeu-141
 263-LeuSerGlnGluGluLysAspIleArgHisSerAsnGlu-275
 307-GlyIleLeuArgHisProGlu-313
 343-ArgValThrArgSerLeuArgGlyGluGlnGluVal-354
 482-LysTyrLysLysAspAlaGly-488
a305

AMPHI Regions - AMPHI

10-LeuMetMetGlyLeuValGluGlyPheThrGluPheLeuPro-23
 33-PheGlyAsnLeuIleAspPheHisSer-41
 66-PheSerAsnValLeuHis-71
 93-AlaAlaValMetGly-97
 99-LeuPheGlyLysGlnIleLysGluTyrLeuPhe-109
 141-AspValAspAlaLeuArgProIleAspAla-150
 155-ValAlaGlnValPheAla-160
 202-AlaTyrAspValLeuLysHisTyrArgPhePheThrLeuHis-215
 222-IleGlyPheValAlaAlaPheValSer-230
 235-ValLysAlaLeuLeuArg-240

Antigenic Index - Jameson-Wolf

40-HisSerAsnHisLys-44
 61-GluTyrArgGlnArgPheSerAsn-68
 72-GlyValGlyLysAspArgLysAlaAsn-80
 128-ValGluLysArgGlnSerArgAlaGluProLysIleValAsp-141
 143-AspAlaLeuArgProIleAsp-149
 163-ProGlyThrSerArgSerGlySer-170
 180-IleGluArgLysThrAlaThr-186
 241-PheValSerLysLysAsnTyr-247

Hydrophilic Regions - Hopp-Woods

62-TyrArgGlnArgPhe-66
 73-ValGlyLysAspArgLysAlaAsn-80
 128-ValGluLysArgGlnSerArgAlaGluProLysIleValAsp-141
 143-AspAlaLeuArgProIleAsp-149
 165-ThrSerArgSerGlySer-170
 180-IleGluArgLysThrAlaThr-186
 242-ValSerLysLysAsn-246
a308-2

AMPHI Regions - AMPHI

6-PheTyrArgIleLeuGlyValAlaAspAsnLeuTyrProTyrLeu-20
 27-ThrIleIleAlaGlyLeu-32
 64-AlaLeuGluLeuLeuArgAlaGlnAsp-72
 83-AlaGluMetAlaArgAlaSerGlu-90
 101-LeuAlaAspPheValHisProIleGlyAsnIleGlyAlaCys-114
 131-SerMetArgThrLeuAlaSerValValHisGlyPheGlyAsp-144
 172-LeuAlaHisLeuAspAsnMetLysArgValThrGlu-183

Antigenic Index - Jameson-Wolf

39-TrpGluArgArgMetMetVal-45
 68-LeuArgAlaGlnAspIleGluThr-75
 80-SerLysGlyAlaGluMetAlaArgAlaSerGluThrAlaTyrAlaArgAspGluVal-98
 118-GlyThrPhelysThrAspGlyMet-125
 142-PheGlyAspAsnLeuLeu-147
 149-ArgAlaAlaAspValValLeuLysGluArgArgLeu-161

166-ArgGluThrProLeu-170
 176-AspAsnMetLysArgValThrGluMetGly-185
 195-MetTyrArgLysProGlnThrAlaAspAspIleVal-206
 219-IleAspThrProAspSerAlaGlu-226

Hydrophilic Regions - Hopp-Woods

39-TrpGluArgArgMetMetVal-45
 68-LeuArgAlaGlnAspIleGluThr-75
 81-LysGlyAlaGluMetAlaArgAlaSerGlu-90
 92-AlaTyrAlaArgAspGluVal-98
 120-PheLysThrAspGly-124
 149-ArgAlaAlaAspValValLeuLysGluArgArgArgLeu-161
 176-AspAsnMetLysArgValThrGlu-183
 195-MetTyrArgLysProGlnThrAlaAspAspIleVal-206
 220-AspThrProAspSerAlaGlu-226
a311-1

AMPHI Regions - AMPHI

7-SerHisTrpArgValLeuAlaGluLeuAlaAspGlyLeuProGlnHisValSerGlnLeuAlaArgMetAlaAsp-31
 37-LeuAsnGlyPheTrpGlnGlnMetProAlaHisIleArgGlyLeuLeuArg-53
 55-HisAspGlyTyrTrpLeuValArgProLeuAlaValPheAspAlaGluGlyLeuArgGluLeuGly-77
 124-ArgGlnGlyArgLysTrpSerHisArgLeu-133
 165-ArgAlaLeuSerArgLeu-170
 219-VaIGluAsnAlaAlaSerValGlnSerLeuPheGln-230
 245-GluThrLeuLeuAlaGlu-250
 291-PheGluGlyThrValLysGlyValAspGlyGlnGlyVal-303
 362-ThrValGlySerAlaProTyrArgAspLeuSerProLeu-374
 376-AlaIleTrpAlaGluLysVal-382
 391-CysAlaValCysGlyGluPheLysLys-399
 426-TyrArgHisProGluGluHisGlySerAspArgTrpPheAsnAlaLeuGlySer-443
 493-AsnLeuAsnArgHisAla-498
 511-AlaValAlaSerGlyMetMetAspAlaValCys-521
 550-AlaAlaLysValAlaGluAlaLeuProPro-559
 576-HisGlyLeuLeuAsnLeu-581

Antigenic Index - Jameson-Wolf

28-ArgMetAlaAspMetLysProGlnGln-36
 50-GlyLeuLeuArgGlnHisAspGlyTyr-58
 71-GluGlyLeuArgGluLeuGlyGluArgSerGlyPhe-82
 86-LeuLysHisGluCysAlaSerSerAsnAspGluIleLeuGlu-99
 102-ArgIleAlaProAspLysAlaHisLys-110
 116-HisLeuGlnSerLysGlyArgGlyArgGlnGlyArgLysTrpSerHisArgLeuGlyGlu-135
 145-PheAspArgProGlnTyrGluLeuGlySer-154
 162-AlaCysArgArgAlaLeuSer-168
 174-ThrGlnIleLysTrpProAsn-180
 182-LeuValValGlyArgAspLysLeuGly-190
 196-ThrValArgThrGlyGlyLysThrVal-204
 215-LeuProLysGluValGluAsn-221
 231-ThrAlaSerArgArgGlyAsnAlaAsp-239
 258-TyrAlaLysAspGlyPheAla-264
 272-AlaAlaAsnArgAspHisGlyLys-279
 284-LeuArgAspGlyGluThrValPhe-291
 293-GlyThrValLysGlyValAspGlyGlnGly-302
 307-GluThrAlaGluGlyLysGlnThrValValSerGlyGluIleSerLeuArgSerAspAspArgProValSer
 ValProLysArgArgAspSerGluArg-339

344-AspGlyGlyAsnSerArgLeu-350
 364-GlySerAlaProTyrArgAspLeuSerProLeuGly-375
 378-TrpAlaGluLysValAspGlyAsnValArgIle-388
 395-GlyGluPheLysLysAlaGlnValGln-403
 405-GlnLeuAlaArgLysIleGlu-411
 424-AsnHisTyrArgHisProGluGluHisGlySerAspArgTrp-437
 440-AlaLeuGlySerArgArgPheSerArgAsnAla-450
 464-AlaLeuThrAspAspGlyHisTyrLeuGly-473
 483-MetLysGluSerLeuAla-488
 492-AlaAsnLeuAsnArgHisAlaGlyLysArgTyrPro-503
 529-GlyArgLeuLysGluLysThrGlyAlaGlyLysProVal-541
 547-GlyGlyGlyAlaAlaLysValAlaGlu-555
 565-AsnThrValArgValAlaAsp-571
 584-AlaGluGlyGlyGluSerGluHisThr-592

Hydrophilic Regions - Hopp-Woods

28-ArgMetAlaAspMetLysProGlnGln-36
 50-GlyLeuLeuArgGlnHis-55
 71-GluGlyLeuArgGluLeuGlyGluArgSerGlyPhe-82
 86-LeuLysHisGluCysAlaSerSerAsnAspGluIleLeuGlu-99
 102-ArgIleAlaProAspLysAlaHisLys-110
 118-GlnSerLysGlyArgGlyArgGlnGlyArgLysTrpSerHisArgLeuGlyGlu-135
 162-AlaCysArgArgAlaLeuSer-168
 183-VaiValGlyArgAspLysLeuGly-190
 196-ThrValArgThrGlyGlyLys-202
 217-LysGluValGluAsn-221
 232-AlaSerArgArgGlyAsnAlaAsp-239
 259-AlaArgAspGlyPhe-263
 272-AlaAlaAsnArgAspHisGlyLys-279
 285-ArgAspGlyGluThrValPhe-291
 293-GlyThrValLysGlyValAspGly-300
 307-GluThrAlaGluGlyLysGlnThrValVal-316
 320-IleSerLeuArgSerAspAspArgProValSerValProLysArgArgAspSerGluArg-339
 346-GlyAsnSerArgLeu-350
 367-ProTyrArgAspLeuSer-372
 378-TrpAlaGluLysValAspGlyAsnVal-386
 395-GlyGluPheLysLysAlaGlnVal-402
 405-GlnLeuAlaArgLysIleGlu-411
 424-AsnHisTyrArgHisProGluGluHisGlySer-434
 442-GlySerArgArgPheSerArg-448
 464-AlaLeuThrAspAspGlyHis-470
 483-MetLysGluSerLeuAla-488
 493-AsnLeuAsnArgHisAlaGlyLysArgTyrPro-503
 529-GlyArgLeuLysGluLysThrGlyAlaGlyLysProVal-541
 549-GlyAlaAlaLysValAlaGlu-555
 565-AsnThrValArgValAlaAsp-571
 585-GluGlyGlyGluSerGluHisThr-592
a312
AMPHI Regions - AMPHI
 6-GlyGluLleLeuGluThrValLysMetValAla-16
 44-GlnAsnIleTyrAsnLysIleThrThrValGlyLys-55
 82-IleAlaGlnIleAlaAlaAlaThr-89
 95-ValSerValAlaGlnThrLeuAspLysAlaAlaLys-106
 109-GlyValSerPheIleGlyGlyPheSerAlaLeuValGln-121
 133-ArgSerIleProGluAlaMetLysThr-141

167-GlyGluThrIleLysArgThr-173
 182-GlyCysAlaLysIleValValPheCys-190
 230-SerAspAlaThrThrLeuThrGluValAlaGluValValLysLys-244
 249-IleThrArgValGlyGluLeuIleGlyArgGluAlaSerLys-262
 281-ValGlyAspSerValAlaArgIleLeuGluGluMetGly-293
 309-LeuAsnAspAlaVal-313
 322-SerAlaValGlyGlyLeuSerGly-329
 349-LeuThrLeuAspLysLeuGluAlaMetThrAla-359
 374-ThrProAlaHisThrIleSerGlyIleIle-383
 409-ValGlyAspSerValGluPheGlyGlyLeuLeuGly-420

Antigenic Index - Jameson-Wolf

4-GlnSerGlyGluIleLeuGlu-10
 13-LysMetValAlaAspGlnAsnPheAspVal-22
 35-IleSerThrAspIleAspVal-41
 52-ThrValGlyLysAspLeuValAla-59
 89-ThrHisAlaAspSer-93
 100-ThrLeuAspLysAlaAlaLys-106
 121-GlnLysGlyMetSerProSerAspGluValLeu-131
 134-SerIleProGluAlaMetLysThrThrAsp-143
 152-GlySerThrArgAla-156
 161-AspAlaValArgLeuAlaGlyGluThrIleLysArgThrAlaGluIleThr-177
 192-AlaValGluAspAsnProPhe-198
 204-HisGlySerGlyGluAlaAspAla-211
 225-AlaAlaIleGluAsnSerAspAla-232
 237-GluValAlaGluValValLys-243
 251-ArgValGlyGluLeuIleGlyArgGluAlaSerLys-262
 280-AlaValGlyAspSerValAlaArgIleLeuGlu-290
 311-AspAlaValLysLysGlyGlyMet-318
 334-ValSerGluAspGluGlyMet-340
 352-AspLysLeuGluAla-356
 370-ValProGlyAspThrProAla-376
 383-IleAlaAspGluAlaAla-388
 392-IleAsnSerLysThrThrAla-398
 405-ThrGlyLysThrValGlyAspSerValGlu-414
 426-ProValLysGluGlySerCys-432
 435-PheValAsnArgGlyGlyArgIle-442
 447-GlnSerMetLysAsn-451

Hydrophilic Regions - Hopp-Woods

18-GlnAsnPheAspVal-22
 35-IleSerThrAspIleAspVal-41
 52-ThrValGlyLysAspLeuValAla-59
 100-ThrLeuAspLysAlaAlaLys-106
 123-GlyMetSerProSerAspGluValLeu-131
 134-SerIleProGluAlaMetLysThrThrAsp-143
 161-AspAlaValArgLeuAlaGlyGluThrIleLysArgThrAlaGluIleThr-177
 192-AlaValGluAspAsnPro-197
 207-GlyGluAlaAspAla-211
 225-AlaAlaIleGluAsnSerAspAla-232
 237-GluValAlaGluValValLys-243
 251-ArgValGlyGluLeuIleGlyArgGluAlaSerLys-262
 284-SerValAlaArgIleLeuGlu-290
 311-AspAlaValLysLysGlyGlyMet-318
 334-ValSerGluAspGluGlyMet-340

-490-

352-AspLysLeuGluAla-356
 383-IleAlaAspGluAlaAla-388
 408-ThrValGlyAspSerValGlu-414
 426-ProValLysGluGlySerCys-432
 438-ArgGlyGlyArgIle-442
 447-GlnSerMetLysAsn-451
a313-2
AMPHI Regions - AMPHI
 27-GlyMetAspAspProArgThrTyrGlySerGly-37
 41-AlaThrAsnValLeu-45
 60-AspAlaAlaLysGly-64
 66-ValAlaValLeuAlaArgValLeuGlnGluPro-77
 88-ValAlaLeuAlaAlaLeuValGlyHisMetTrpPro-99
 143-SerLeuAlaAlaLeuThrAlaThrIleAlaAlaProLeuAlaAla-157

Antigenic Index - Jameson-Wolf
 26-TyrGlyMetAspAspProArgThrTyrGlySerGlyAsnProGlyAla-41
 46-ArgSerGlyLysLysAlaAla-53
 73-ValLeuGlnGluProLeuGlyLeuSerAspSerAla-84
 104-PheLysGlyGlyLysGlyVal-110
 180-ArgHisLysSerAsn-184
 189-IleLysGlyLysGluSerLysIleGlyGluLysArg-200

Hydrophilic Regions - Hopp-Woods
 26-TyrGlyMetAspAspProArgThrTyrGly-35
 46-ArgSerGlyLysLysAlaAla-53
 105-LysGlyGlyLysGlyVal-110
 189-IleLysGlyLysGluSerLysIleGlyGluLysArg-200
a401

AMPHI Regions - AMPHI
 44-SerGlyValLysProTyrAsnAlaLeu-52
 65-CysTyrAsnCysHisSerGlnMetIleArgProPheArg-77
 112-ValGlyGlyArgTyrSerAspGluTrpHisArgIle-123
 157-MetLysAlaLeuArgLysValGlyThr-165
 172-IleAlaLysAlaProGluAlaLeu-179

Antigenic Index - Jameson-Wolf
 5-GlnLeuAlaGluGluLysIle-11
 38-AlaAlaThrGlnProAlaSerGlyValLysProTyrAsn-50
 55-AlaGlyArgAspIleTyrIleArgGluGlyCysTyrAsnCysHis-69
 74-ArgProPheArgAlaGluThrGluArgTyrGlyHis-85
 90-GlyGluSerValTyr-94
 98-PheGlnTrpGlySerLysArgThrGlyProAspLeuAlaArgValGlyGlyArgTyrSerAspGluTrpHis-121
 125-LeuLeuAsnProArgAspValValProGluSerAsnMetPro-138
 146-AsnLysValAspValAspAla-152
 158-LysAlaLeuArgGlyValGlyThrProTyrSerAspGluGluIleAlaLysAlaProGlu-177
 179-LeuAlaAsnLysSerGluLeuAspAla-187

Hydrophilic Regions - Hopp-Woods
 5-GlnLeuAlaGluGluLysIle-11
 76-PheArgAlaGluThrGluArgTyrGly-84
 101-GlySerLysArgThrGlyProAspLeuAlaArgValGlyGlyArgTyrSerAspGluTrpHis-121
 127-AsnProArgAspValValPro-133
 146-AsnLysValAspValAspAla-152

158-LysAlaLeuArgLysValGly-164
 167-TyrSerAspGluIleAlaLysAlaProGlu-177
 179-LeuAlaAsnLysSerGluLeuAspAla-187

a402

AMPHI Regions - AMPHI

18-PheLeuSerGlyLeu-22
 85-AlaGlyIleAlaAspPhe-90
 100-ThrGlyPheSerGlyPheValHis-107
 117-AlaValValArgGlyLeu-122
 136-LysSerGlyArgGln-140
 146-PheAlaAsnValAlaGly-151
 218-ValPheGlnAsnIleAlaAspArgProAspArgLeuIle-230
 261-AspValPheAsnSerValasnGlyIleGlu-270
 279-LysSerGlyIleArg-283
 294-SerTrpAlaArgValLeuSerAlaIleProGluMetGln-306
 344-ArgLysTrpLeuArgArgHisPro-351
 376-AlaGluPheLeuLysGlnValGlnSerHisLeu-386
 398-HisSerProHisAlaPheAlaThrAlaValHisSerIlePro-411
 437-GlnArgLeuSerArgLeu-442
 460-AlaAlaGlnLysVal-464

Antigenic Index - Jameson-Wolf

4-ValAsnThrLysProAsnThrSer-11
 66-ArgIleCysArgSerArgPheValAsp-74
 130-ValGlyThrAspGlyAsnLysSerGlyArgGlnValSer-142
 222-IleAlaAspArgProAspArgLeuIleGluAsnLysHisGly-235
 240-TyrHisArgAspGlyAspGlyLeuAspValVal-248
 264-AsnSerValAsnIleGluArg-271
 277-SerLeuLysSerGlyIleArgArg-284
 321-IleAlaAspGluProGln-326
 331-LeuGlnAspLysArgValGluIleValLeuAspAspGlyArgLysTrpLeuArgArgHisProAspGluLys
 PheAsp-356
 385-HisLeuThrProAspGly-390
 429-PheProAsnLysGluIleLeuLysGlnArgLeuSer-440
 444-TrpProGluSerGlyArgHisValPheAspSerSerThrVal-457
 472-MetThrGluProSerAlaGly-478
 481-ValIleThrAspAspAsnMet-487
 489-ValGluTyrLysTyrGlyArgGlyIle-497

Hydrophilic Regions - Hopp-Woods

131-GlyThrAspGlyAsnLysSerGlyArgGlnVal-141
 222-IleAlaAspArgProAspArgLeuIleGluAsnLysHis-234
 241-HisArgAspGlyAspLysValVal-248
 278-LeuLysSerGlyIleArg-283
 321-IleAlaAspGluProGln-326
 331-LeuGlnAspLysArgValGluIleValLeuAspAspGlyArgLysTrpLeuArgArgHisProAspGluLys
 PheAsp-356
 430-ProAsnLysGluIleLeuLysGlnArgLeuSer-440
 446-GluSerGlyArgHisValPhe-452
 473-ThrGluProSerAlaGly-478
 481-ValIleThrAspAspAsnMet-487
 a501
AMPHI Regions - AMPHI
 63-ValGluValLeuGlnGluLeuPheArgGlnTyrArgValAlaArgGlnLeu-79

88-ValPheAlaAlaPheGlnAlaVal-95

97-PheGlnGlyPheAspAsnGlyPhe-104

126-AlaAspAlaPheGlnGly-131

139-ValPheGluValValGlyAspIleThrArgArgThrThrGluAla-153

183-AspGlyPheThrArgIleAsnArgCysGlyGlnCys-194

196-HisalaPheGlyAspPheIleAsp-203

252-AlaPheAlaGlyGlnVal-257

270-HisIleAspPheTyrArgCysPheArgHisValValGlnSerAsnIleGlyAsnLeu-288

306-TyrGlyAsnPheLeuThrValPheGlnGlnPheGlyCys-318

364-GlyAsnGlnTyrValAlaGlyPhe-371

438-AlaSerProPheAsp-442

458-ArgGlnLeuGlyAspPhe-463

511-PheGlnArgGlyPheGluHisIleGlu-519

528-TyrAspValPheAlaGln-533

Antigenic Index - Jameson-Wolf

6-LeuThrAlaAspAla-10

17-AlaAlaGlyGlyAspGlyLysVal-24

26-HisHisPheAspGly-30

46-ValGluThrGluGlyGln-51

56-ValArgAlaAspGlyGluAlaValGluVal-65

100-PheAspAsnGlyPhe-104

108-GlnSerAlaAspGluArgAsnHisAspPheAsnValGlyGln-121

144-GlyAspIleThrArgArgThrThrGluAlaGlnHis-155

179-GlyHisThrAspAspGlyPheThrArgIleAsnArgCysGlyGlnCys-194

202-IleAspValGluValAspArgGlyArgValThrGlyAspThrAlaGlyAsnPhe-219

230-GlnGlnGlyPheGlyValAspThrAspLeuAlaValAspAspLysPheHisThrArgGlnAlaAsp-251

257-ValGlyAlaGluCysGluPheGly-265

269-ValIleHisAspPheTyrArgCys-276

294-GlyValAspGluAlaGly-299

320-AlaAlaAlaAspAsnGlyArgAsnThrGlnPheAlaArgAspAspGlyGlyValAlaGlyThrSerAlaPro
ValGlyHisAspGlyGlySer-350

405-ValAspArgLysAlaAla-410

420-PheAspGlyPheGlyThrGlyLeuGlnAsp-429

439-SerProPheAspValHisArg-445

477-AspIleAspValGlyTyr-482

490-ValGlyLysAsnHisPheAsp-496

502-PheAlaGlnAspGlyArgPhe-508

512-GlnArgGlyPheGluHis-517

535-ValGlySerAspLysAspAspLeuVal-543

548-GlyIleGluGlyGluHisHisThr-555

Hydrophilic Regions - Hopp-Woods

6-LeuThrAlaAspAla-10

19-GlyGlyAspGlyLysVal-24

46-ValGluThrGluGlyGln-51

56-ValArgAlaAspGlyGluAlaValGluVal-65

108-GlnSerAlaAspGluArgAsnHisAsp-116
 144-GlyAspIleThrArgArgThrThrGluAlaGlnHis-155
 179-GlyHisThrAspAspGlyPheThrArgIleAsnArg-190

202-IleAspValGluValAspArgGlyArgValThrGlyAspThr-215

237-ThrAspLeuAlaValAspAspLysPheHisThrArgGlnAlaAsp-251
 257-ValGlyGluAlaGluCysGluPheGly-265
 294-GlyValAspGluAlaGly-299
 323-AspAsnGlyArgAsnThrGlnPheAlaArgAspAspGlyGlyVal-337
 344-ValGlyHisAspGly-348
 405-ValAspArgLysAlaAla-410
 535-ValGlySerAspLysAspAspLeuVal-543
 549-IleGluGlyGluHisHisThr-555

a502-1

AMPHI Regions - AMPHI
 6-AsnLeuPheGlnPheLeuAlaVal-13
 26-GlyAlaValAspAlaLeuLysGlnPheAsnAsnAspAlaAspGlyIleSerGlySerPheThrGln-47
 98-GlnValThrLysSerSerGlnAsp-105

Antigenic Index - Jameson-Wolf

32-LysGlnPheAsnAsnAspAlaAspGlyIleSerGlySer-44
 48-ThrValGlnSerLysLysThrGlnThrAlaHisGlyThr-61
 74-TyrThrSerProTyrLysGlnThrIle-82
 98-GlnValThrLysSerSerGlnAspGlnAlaIleGlyGlySerPro-112
 116-LeuSerAsnLysThrAlaLeuGluSerSerTyrThrLeuLysGluAspGlySerSerAsnGly-136
 142-AlaIhrProLysArgAsnAsnAlaGly-150
 158-PheLysGlyGlyAsn-162
 167-GlnLeuLysAspSerPheGlyAsnGlnThr-176
 184-AsnThrAsnProGlnLeuSerArgGlyAlaPhe-194
 196-PheThrProProLysGlyValAspVal-204

Hydrophilic Regions - Hopp-Woods

34-PheAsnAsnAspAlaAspGlyIle-41
 49-ValGlnSerLysLysThrGlnThr-57
 100-ThrLysSerSerGlnAspGlnAlaIle-108
 126-TyrThrLeuLysGluAspGlySerSerAsn-135
 143-ThrProLysArgAsnAsnAla-149
 167-GlnLeuLysAspSerPheGly-173

a503-1

AMPHI Regions - AMPHI
 6-TyrArgGluAlaAsnThrTrp-12
 96-SerSerThrSerAsnPheAlaSerAlaAlaGluMetArgSerLeu-110

Antigenic Index - Jameson-Wolf

4-SerLeuTyrArgGluAlaAsnThr-11
 26-ArgLysValSerCys-30
 32-ProAlaAsnAspAlaSerGlyArgSerSerAlaValAlaGluGluArgThrAlaThrGluMetSerAlaProProAla-57
 69-SerAlaSerSerCysSerGlyLysGlyValSer-79
 87-LeuProThrArgAlaSerSerAlaThrSerSerThrSerAsn-100
 105-AlaGluMetArgSerLeuArg-111
 113-LeuCysAlaArgAsnAlaArg-119

Hydrophilic Regions - Hopp-Woods

4-SerLeuTyrArgGlu-8
 35-AspAlaSerGlyArgSerSerAlaValAlaGluGluArgThrAlaThrGluMetSerAla-54
 73-CysSerGlyLysGlyValSer-79
 89-ThrArgAlaSerSer-93
 105-AlaGluMetArgSerLeuArg-111
a505
AMPHI Regions - AMPHI
 20-LeuThrAlaLeuLeuLysCysLeuSerLeuLeuProLeuSerCysLeu-35
 37-ThrLeuGlyAsnArg-41
 89-ProAlaPhePheArgLysProGluAspIleGluThrMetPheLysAlaValHisGlyTrpGluHisValGlnGlnAlaLeuAsp-116
 148-AlaMetTyrLysProProLysIleLysAlaIleAspLysIleMetGlnAlaGly-165
 178-IleGlnGlyValLysGlnIleIleLysAlaLeuArg-189
 210-GlyValTrpValaspPheGlyLysPro-219

Antigenic Index - Jameson-Wolf

38-LeuGlyAsnArgLeuGly-43
 50-LeuLysGluAspArgAlaArgIle-57
 62-ArgGlnAlaGlyMetAsnProAspProLysThrVal-73
 79-GluThrAlaLysGlyGlyLeu-85
 92-PheArgLysProGluAspIleGluThr-100
 114-AlaLeuAspLysHisGlu-119
 129-GlySerTyrAspLeuGlyGlyArgTyrIleSer-139
 142-LeuProPheProLeu-146
 150-TyrLysProProLysIleLysAlaIleAspLysIleMetGln-163
 165-GlyArgValArgGlyLysGlyLysThrAlaProThrSer-177
 183-GlnIleIleLysAlaLeuArgSerGlyGluAlaThr-194
 198-ProAspHisValProSerProGlnGluGlyGlyGluGlyVal-211
 242-CysGluArgLeuProGlyGlyGlnGly-250
 257-ProValGlnGlyGluLeuAsnGlyAspLysAlaHisAsp-269
 292-TyrAsnArgTyrLysMetPro-298

Hydrophilic Regions - Hopp-Woods

50-LeuLysGluAspArgAlaArgIle-57
 62-ArgGlnAlaGlyMetAsnProAspProLysThrVal-73
 79-GluThrAlaLysGlyGlyLeu-85
 92-PheArgLysProGluAspIleGluThr-100
 114-AlaLeuAspLysHisGlu-119
 151-LysProProLysIleLysAlaIleAspLysIleMetGln-163
 165-GlyArgValArgGlyLysGlyLysThrAlaPro-175
 183-GlnIleIleLysAlaLeuArgSerGlyGlu-192
 201-ValProSerProGlnGluGlyGlyGlu-209
 258-ValGlnGlyGluLeuAsnGlyAspLysAlaHisAsp-269
a506

AMPHI Regions - AMPHI

6-GluValGlyArgValAlaHisCysGlyGlyGlyVal-17
 25-ArgValValHisGlnValGluGlnGlyAlaArg-35
 53-AlaValAspPheGlnArgArgPhe-60
 99-AlaThrArgThrValAspArgAspLeuAlaGluVal-110
 138-GlyAsnGluValAlaArgCys-144
 180-GlnValLysArgMetIleArgHisPhePheArg-190
 199-ValHisArgProPheArgLysLeuAlaAlaLeuAspGlyPheValGlnVal-215
 224-GlyAspAspPheGlyGlyPheValGlyGlnValPheAsnAlaLeuLeu-240
 313-PheValGlnValGlyGluLeuThrArgValAlaGlnGluGlu-326

372-GlyPhePheAlaAspPheAlaGluAspPheGlyAlaGlyValPheGlyAspValValArgTyrGlyLysArg
 Thr-396
 408-PheGlyAspAspPheAlaHisGluValGlyGlu-418
 427-ArgGlnGlnArgAlaAlaArgThr-434

Antigenic Index - Jameson-Wolf

13-CysGlyGlyGlyValAla-18
 31-GluGlnGlyAlaArgLeu-36
 48-ProValArgArgValAlaValAspPheGlnArgArgPheGlyGluVal-63
 98-ArgAlaThrArgThrValAspArgAspLeuAlaGlu-109
 134-GlyAlaAspThrGlyAsnGluValAlaArgCysGluGly-146
 176-ProAsnPheGlyGlnValLysArgMetIle-185
 192-GlyPheArgHisAspLeuAspValHisArgProPheArgLys-205
 223-ValGlyAspAspPheGlyGly-229
 244-MetGluPheHisProLysThr-250
 259-ValGlyMetArgThrGluAla-265
 289-GlyGlnGlnArgProGluValProVal-297
 318-GluLeuThrArgValAlaGlnGluGluHisGlyArgValValAla-332
 343-GluLeuGlnArgLysThrAlaAsp-350
 362-CysHisGlyGluThrGlyGlu-369
 377-PheAlaGluAspPheGly-382
 389-ValValArgTyrGlyLysArgThrGluArgAlaArgThr-401
 408-PheGlyAspAspPheAlaHisGluVal-416
 424-GlnIleLeuArgGlnGlnArgAlaAlaArgThrGlyGlyGln-437
 442-ValGlyAsnArgArgAlaVal-448
 458-PheGlyGlyKxxHisArgSerCysSer-466
 471-GlyGlnXxxGlyLysArgLeuThrValArgPheGlyGlyLysArgIleArgAsnArgPheLeuAspCys
 AsnLysPheLeuLys-499
 510-MetAspAlaThrIleArgGlnAspPheArgTyr-520

Hydrophilic Regions - Hopp-Woods

31-GluGlnGlyAlaArgLeu-36
 48-ProValArgArgValAlaValAspPheGlnArgArgPheGlyGlu-62
 98-ArgAlaThrArgThrValAspArgAspLeuAlaGlu-109
 136-AspThrGlyAsnGluValAlaArgCysGluGly-146
 180-GlnValLysArgMetIle-185
 195-HisAspLeuAspVal-199
 201-ArgProPheArgLys-205
 223-ValGlyAspAspPhe-227
 244-MetGluPheHisPro-248
 259-ValGlyMetArgThrGluAla-265
 291-GlnArgProGluVal-295
 318-GluLeuThrArgValAlaGlnGluGluHisGlyArgValValAla-332
 343-GluLeuGlnArgLysThrAlaAsp-350
 364-GlyGlyGluThrGlyGlu-369
 377-PheAlaGluAspPheGly-382
 390-ValArgTyrGlyLysArgThrGluArgAlaArgThr-401
 408-PheGlyAspAspPheAlaHisGluVal-416
 425-IleLeuArgGlnGlnArgAlaAlaArgThrGlyGly-436
 443-GlyAsnArgArgAlaVal-448
 473-KxxGlyGlyLysArgLeuThr-479
 482-PheGlyGlyLysArgIleArgAsnArgPheLeuAsp-493
 510-MetAspAlaThrIleArgGlnAspPheArgTyr-520
a513

AMPHI Regions - AMPHI

-496-

6-ThrGluTrpLeuHisGlyTrpValGlyAlaIleAsnAspProMetTrp-21
 23-TyrLeuValTyrXxxLeu-28
 48-GlyArgSerIleLysGlu-53
 66-GlyIleThrProPheGlnAlaPheValThrGlyLeuAla-78
 119-SerSerLeuAlaGlnLeuPheLysValArgAsp-129
 146-GlyLeuGlyGlnLysTrpLeuGlyVal-154
 176-IleAlaAspThrVal-180
 205-GlyGlyIleArgArgIleSerLysAlaAla-214
 243-ValPheGlyGlnIlePheSer-249
 259-GlyGlyLeuLeuGlyGlyLeuIle-266
 288-AlaProAsnAlaAlaAlaAlaAla-295
 303-GlnGlyMetIleGlnMetLeuGlyValPheValAsp-314
 332-ProTyrGlyAspLeu-336
 347-ValSerGlnValGlnTrp-353
 391-ThrAlaValPheArgMet-396
 403-TyrPheGlyAlaValAla-408
 423-IleMetAlaTrpIleAsnLeuValAlaIleLeuLeuSer-436

Antigenic Index - Jameson-Wolf

1-MetAsnGluAsnPhe-5
 48-GlyArgSerIleLysGluMetLeuGlyGlyArgLysGlnGlyAspAspProHisGly-66
 126-LysValargAspTyrAspAsnHisHisPheArgGlyGlyProAla-140
 208-ArgArgIleSerLysAlaAlaGlu-215
 273-GlyIleLysargGlyLeuTyrSerAsnGluAlaGlyMetGlySerAlaProAsnAla-291
 295-AlaGluValLysHisProVal-301
 331-GlnProTyrGlyAspLeuSerGly
 375-AlaTyrAlaGluSerAsnVal-381
 444-ArgAspTyrThrAlaLysLeuLysMetGlyLysAspProGluPheLysLeuSerGluHisProGlyLeuLys
 ArgArgIleLysSerAspValTrp-475

Hydrophilic Regions - Hopp-Woods

48-GlyArgSerIleLysGluMetLeuGlyGlyArgLysGlnGlyAspAspProHisGly-66
 126-LysValargAspTyrAspAsnHisHis-134
 208-ArgArgIleSerLysAlaAlaGlu-215
 273-GlyIleLysargGlyLeuTyr-279
 295-AlaGluValLysHis-299
 450-LeuLysMetGlyLysAspProGluPheLysLeuSerGlu-462
 464-ProGlyLeuLysArgArgIleLysSer-472
a515-1

AMPHI Regions - AMPHI

8-ArgAlaAlaGlyValAlaArgGlyLeuHisSerGluPheAlaArg-22
 59-AspValArgPhePheAlaGlnValGluGluIleGlyGlnAspPhePheAlaAspAla-77
 90-AlaGlyGluCysAlaAspGluValSerAspLysThr-101
 122-GluSerAlaGlnSerAlaAlaGlyGlyGlyLeuThrAspGlyPheGly-137
 176-CysGlyLysThrValGlyVal-182
 198-GlyValPheAspAla-202
 233-ValAlaAspValLeuArg-238
 251-PheGlyGlyValAlaGlyAspValGlyGlyGlyAlaAspGlyValAlaGlnGlyLeuPheGlyGluIleGly
 GlyAla-276

Antigenic Index - Jameson-Wolf

24-ValThrAlaGluGluIleAlaPhe-31
 38-HisGluAlaArgCysGlyGlyAsn-45
 51-IleAlaAlaAlaGluArgAlaGlyAsp-59
 67-GluGluIleGlyGln-71

77-AlaValAspGlnGluThr-82
 84-LeuAlaValGluArgSerAlaGlyGluCysAlaAspGluValSerAspLysThrAlaArgAsnGlyGlyIleGluGluAspGlyValValAlaCysArgAspAlaAlaAlaGluSerAlaGln-125
 128-AlaGlyGlyGlyLeuThrAspGly-135
 160-GlyGlyAsnAspAlaAlaGlyAsn-167
 192-LeuHisArgArgAla-196
 217-AlaAspGlyGlyPheArg-222
 242-GlyValGlyLysSerGlyAla-248
 257-AspValGlyGlyGlyAlaAspGlyVal-265
 284-AspValAsnGlyAsnValGln-290

Hydrophilic Regions - Hopp-Woods

24-ValThrAlaGluGluIleAlaPhe-31
 38-HisGluAlaArgCysGly-43
 51-IleAlaAlaAlaGluArgAlaGlyAsp-59
 77-AlaValAspGlnGluThr-82
 84-LeuAlaValGluArgSerAlaGlyGluCysAlaAspGluValSerAspLysThrAlaArgAsnGlyGlyIleGluGluAspGlyValValAlaCysArgAspAlaAlaAlaGluSerAlaGln-125
 162-AsnAspAlaAlaGly-166
 192-LeuHisArgArgAla-196
 258-ValGlyGlyGlyAlaAspGlyVal-265
 4519-1

AMPHI Regions - AMPHI

29-ValValGluArgLeuArgPheHisHisArgAlaLeuThrAlaGly-43
 105-MetAlaIleThrGlnLeuAlaGlnThrThrLeuArgSerVal-118
 139-ValSerAlaLeuAspGluAlaAla-146
 166-GluIleLeuArgSerMetGlnAla-173
 192-LysIleGluGlnIle-196
 221-SerAsnAlaGluLysIleAlaArgIleAsn-230
 249-AlaIleArgGlnIleAlaAlaAla-256
 273-GlnTyrValAlaAlaPheAsnAsnLeuAlaLys-283
 292-AlaAsnValAlaAspIleGlySerLeuIleSerAlaGlyMetLysIleIleAspSerSerLysThrAla-31
 4

Antigenic Index - Jameson-Wolf

31-GluArgLeuGlyArgPheHisArg-38
 58-HisSerLeuLysGluIleProLeuAspValProSerGln-70
 72-CysIleThrArgAspAsnThrGlnLeuThrVal-82
 91-ThrAspProLysLeuAlaSer-97
 122-MetGluIleAspLysThrPheGluGluArgAspGluIleAsn-135
 141-AlaLeuAspGluAlaAlaGly-147
 154-LeuArgTyrGluIleLysAspLeuValPro-163
 175-IleThrAlaGluArgGluLysArgAlaArgIleAlaGluSerGluGlyArgLysIleGluGln-195
 197-AsnLeuAlaSerGlyGlnArgGluAlaGluIleGlnGlnSerGluAlaGlnAla-215
 219-AsnAlaSerAsnAlaGluLysIleAlaArgIleAsnArgAlaLysGlyGluAlaGluSerLeuArgLeu-24
 1
 245-AlaAsnAlaGluAlaIleArg-251
 258-GlnThrGlnGlyGlyAlaAspAlaValAsn-267
 281-LeuAlaLysGluSerAsnThr-287
 303-AlaGlyMetLysIleIleAspSerSerLysThrAlaLys-315

Hydrophilic Regions - Hopp-Woods

31-GluArgLeuGlyArgPheHisArg-38
 58-HisSerLeuLysGluIleProLeu-65
 73-IleThrArgAspAsnThr-78

91-ThrAspProLysLeu-95
 122-MetGluLeuAspLysThrPheGluGluArgAspGluIleAsn-135
 141-AlaLeuAspGluAlaAla-146
 154-LeuUrgTyrGluIleLysAspLeuValPro-163
 175-IleThrAlaGluArgGluLysArgAlaArgIleAlaGluSerGluGlyArgLysIleGluGln-195
 200-SerGlyGlnArgGluAlaGluIleGlnGlnSerGluGlyGluAlaGlnAla-216
 221-SerAsnAlaGluLysIleAlaArgIleAsnArgAlaLysGlyGluAlaGluSerLeuArgLeu-241
 245-AlaAsnAlaGluAlaIleArg-251
 281-LeuAlaIleAspSerSerLysThrAlaLys-315
a520-1
AMPHI Regions - AMPHI
 104-LeuThrLysAlaAlaAspGlyGlnValCysArgAlaPheSerSerLeu-119

Antigenic Index - Jameson-Wolf
 20-LysProSerArgArgAlaLeu-26
 47-AlaSerGlyLysIleSerLeuPro-54
 84-ProProAsnAsnSerThrThrSerThrSerArgAlaThrSerSerAsnGlySerLeuThrLysAlaA
 laAspGlyGlnVal-112
 117-SerSerLeuLysSerHisThrAlaGluIleArgIleSerArgProLysArgArgGluIleSerSerAlaLeu
 SerArgAsnThrAlaAla-146
 150-ProThrValProLysProLysArgProMet-159
 166-SerProCysLysProThrGluMet-173

Hydrophilic Regions - Hopp-Woods
 20-LysProSerArgArgAlaLeu-26
 93-ThrSerSerArgAlaThrSerSer-100
 103-SerLeuThrLysAlaAlaAsp-109
 120-LysSerHisThrAlaGluIleArgIleSerArgProLysArgArgGluIleSer-137
 140-LeuSerArgAsnThrAla-145
 151-ThrValProLysProLysArgProMet-159
 168-CysLysProThrGluMet-173
a521
AMPHI Regions - AMPHI
 86-ValLysThrValSerLysProAlaLys-94
 133-GlnAlaArgLeuAlaLysGlyGlyAsn-141
 147-IleAsnAlaLeuGlnSerValLeuAsp-155

Antigenic Index - Jameson-Wolf
 1-MetLysSerLysLeu-5
 36-ValTyrThrThrLysProSerLysSerCysLeuSerThrAspLeuProProIle-53
 55-AsnTyrSerSerGluArgTyrIleProProGlnThrSerGluProThrProSerProSerAsnGlyGln-
 78
 80-ValLysTyrLysAlaProVal-86
 88-ThrValSerLysProAlaLysSerAsnThrProProProGlnGlnAlaProSerAsnAsnSerArgArgSerI
 leLeuGluThrGluLeuSerAsnGluArgLysAlaLeuValGluAlaGlnLysMetLeuSer-132
 135-ArgLeuAlaLysGlyGlyAsnIleAsn-143
 153-ValLeuAspArgGlnGlnAsn-159
 163-LeuGlnArgGluLeuGlyArg-169

Hydrophilic Regions - Hopp-Woods
 1-MetLysSerLysLeu-5
 40-LysProSerLysSerCysLeu-46
 57-SerSerGluArgTyrIle-62
 65-GlnThrSerGluProThrProSerProSerAsnGly-76

80-VallLysTyrLysAlaProVal-86
 88-ThrValSerLysProAlaLysSerAsnThrProPro-99
 102-GlnAlaProSerAsnSerArgArgSerIleLeuGluThrGluLeuSerAsnGluArgLysAlaLeuVal
 GluAlaGlnLysMetLeuSer-132
 153-ValLeuAspArgGlnGlnAsn-159
 163-LeuGlnArgGluLeuGlyArg-169
 a522

AMPHI Regions - AMPHI

57-LysIleValGluSerCysValLys-64
 96-MetTrpGluGlnProLeuAspArgLeuSerGluLysGlnIleSerSerPheGlyLysLeuGlyAlaGlnGluG
 inLeuAspLeuLeuGlyGlyAla-127

Antigenic Index - Jameson-Wolf

1-MetThrGluProLysHisGluMetProThrGluGlnValAlaAlaArgLysLysAlaLysAlaLysIleAr
 gThr-26
 48-AlaMetSerLysProGlnAlaLysGlnLysIleValGluSerCysValLys-64
 71-LysTrpGlnAsnAspLeuArgAlaArgGlyLeuAspSerAsnAsnThrArgLeuThr-89
 99-GlnProLeuAspArgLeuSerGluLysGlnIleSerSerPheGlyLysLeuGlyAla-117
 128-AsnAlaPheGluThrArgAspLysGlnCysValAlaAspLeuLysSerGlu-144

Hydrophilic Regions - Hopp-Woods

1-MetThrGluProLysHisGluMetProThrGluGlnValAlaAlaArgLysLysAlaLysAlaLysIleAr
 gThr-26
 48-AlaMetSerLysProGlnAlaLysGlnLysIleValGluSerCysVal-63
 72-TrpGlnAsnAspLeuArgAlaArgGlyLeuAspSerAsnAsnThr-86
 100-ProLeuAspArgLeuSerGluLysGlnIle-109
 130-PheGluThrArgAspLysGlnCysValAlaAspLeuLysSerGlu-144
 a525-1

AMPHI Regions - AMPHI

59-GluPheAlaGluPheValAsnSerHisProGln-69
 86-LysHisTrpMetLysAsnGly-92
 125-ArgLeuProThrIleAspGluTrpGluPhe-134
 166-AspLeuHisAspValGly-171
 178-TrpGlyValTyrAsp-182
 188-TrpGluTrpThrGlu-192

Antigenic Index - Jameson-Wolf

24-ValGlnIleGluGlyGlySerTyrArgProLeuTyrLeuLysLysAspThrGlyLeuIleLys-44
 46-LysProPheLysLeuAspLysTyrProValThr-56
 67-HisProGlnTrpGlnArgIleGlySerLysGlnAlaGlu-81
 88-TrpMetLysAsnGlySerArgSerTyrAlaProLysAlaGlyAspLeuLysGlnPro-106
 122-GlnGlyLysArgLeuProThrIleAspGluTrpGlu-133
 140-AlaThrGlnLysAsnGlySerAsnGluProGlyTyrAsnArgThr-154
 159-TyrAlaAspGlyAspArgLysAspLeuHisAspValGlyLysGlyArgProAsnTyr-177
 190-TrpThrGluAspPheAsnSerSerLeuLeuSerSerGlyAsnAla-204
 213-AlaSerIleGlySerSerAspSerSerAsnTyr-223
 234-SerLeuGlnSerLysTyr-239

Hydrophilic Regions - Hopp-Woods

35-TyrLeuLysLysAspThrGlyLeuIleLys-44
 46-LysProPheLysLeuAspLysTyrPro-54
 71-GlnLysGlyArgIleGlySerLysGlnAlaGlu-81
 91-AsnGlySerArgSerTyrAla-97
 99-LysAlaGlyAspLeuLysGln-105
 122-GlnGlyLysArgLeuProThr-128

-500-

140-AlaThrGlnLysAsnGlySerAsnGluProGlyTyr-151
 160-AlaAspGlyAspArgLysAspLeuHisAspValGlyLysGlyArgPro-175
 216-GlySerSerAspSerSerAsn-222
a527

AMPHI Regions - AMPHI
 7-PhePheGlnProValGln-12
 28-SerAspAlaAlaGluLeuValGluLeuPheAlaLeuPhePro-41
 73-GlyLysGlyIleGluArgGlnValAspAsnIleAlaAspValTyrGlyPhe-89

Antigenic Index - Jameson-Wolf
 26-GlyGlySerAspAlaAlaGlu-32
 52-GlnLysProArgLeuGlyCys-58
 71-PheIleGlyLysGlyIleGluArgGlnValAspAsnIleAla-84
 107-LeuLeuArgLysGlyThrGlyLeuGluLysThrCysArgProLysProPheValGlnProHisGlyArg-130

Hydrophilic Regions - Hopp-Woods
 27-GlySerAspAlaAlaGlu-32
 52-GlnLysProArgLeuGlyCys-58
 75-GlyIleGluArgGlnValAspAsnIleAla-84
 107-LeuLeuArgLysGlyThrGlyLeuGluLysThrCysArgProLysPro-122
a528
AMPHI Regions - AMPHI
 7-LysTyrThrAlaMetAlaLeuLeuAlaPhe-17
 23-ArgLeuAlaGlyTrpTyrGluCysSerSerLeuSerGlyTrpCysLysProArgLysProAlaAlaIle-45
 69-AsnArgSerValArg-73
 86-TyrArgLysIleGlyLysPhe-92
 106-ProLeuIleGluThrPheLys-112

Antigenic Index - Jameson-Wolf
 1-MetGluIleArgAla-5
 29-GluCysSerSerLeuSerGlyTrpCysLysProArgLysProAlaAla-44
 49-AspIleGlyGlyGluSerProProSerLeuGluAspTyrGluIleProLeuSerAspGlyAsnArgSerValA
 rgAlaAsnGluTyrGluSerAlaGlnGlnSer-83
 88-LysIleGlyLysPheGluAlaCysGlyLeuAspTrpArgThrArgAspGlyLysProLeu-107
 110-ThrPheLysGlnGluGlyPheAspCysLeuLysLysGlnGlyLeuArgArgAsnGlyLeuSerGluArgVal
 ArgTrp-135

Hydrophilic Regions - Hopp-Woods
 1-MetGluIleArgAla-5
 37-CysLysProArgLysProAlaAla-44
 51-GlyGlyGluSerProProSerLeuGluAspTyrGluIleProLeu-65
 67-AspGlyAsnArgSerValArgAlaAsnGluTyrGluSerAlaGln-81
 88-LysIleGlyLysPheGluAlaCys-95
 99-TrpArgThrArgAspGlyLysProLeu-107
 111-PheLysGlnGluGlyPheAspCysLeuLysLysGlnGlyLeuArgArgAsnGlyLeuSerGluArgValArg
 Trp-135
a529
AMPHI Regions - AMPHI
 11-LeuAlaLeuIleGlyLeuAlaAlaCysSer-20
 35-SerHisArgLeuIle-39
 49-AsnProAspGlnGlyAsnLeuTyrArgLeuProAla-60
 79-GlnGlnProAlaAspAlaGluValLeuLysSerVallysGlyValArg-94
 152-GlnAspSerLeuArgArgLeuPhePro-160
 162-ValGlyLeuGlyGlyIleTyr-168

-501-

196-AlaMetLysGluVal-200
 223-AlaPheLeuThrArgPheMetGlnTyrLeu-232
 252-AlaAsnGluMetAla-256
 270-GlyArgAsnTrpArg-274

Antigenic Index - Jameson-Wolf

19-CysSerGlySerLysThrGluGlnProLysLeuAspTyrGlnSerArgSerHisArgLeuIleLys-40
 42-GluValProProAspLeuAsnAsnProAspGlnGlyAsnLeuTyr-56
 60-AlaGlySerGlyAlaValArgAlaSerAspLeuGluLysArgArgThrProAlaVal-78
 80-GlnProAlaAspAlaGluValLeuLysSerValLysGlyValArgLeuGluArgAspGlySerGln-101
 105-ValValAspGlyLysSerHisAla-112
 123-GlnGluAsnGlyPheAspIleLysSerGluGluProAla-135
 139-MetGluThrGluTrpAlaGluAsnArgAlaLysIleProGlnAspSerLeuArgArgLeuPhe-159
 169-SerThrGlyGluArgAspLysPheIleValArgIleGluGlnGlyLysAsnGlyValSer-188
 195-LysAlaMetLysGluValTyrGlyGlyLysAspLysAspThrThr-209
 212-GlnProSerProSerAspProAsnLeu-220
 233-GlyValAspGlyGlnGlnAlaGluAsnAlaSerAlaLysLysProThrLeu-249
 253-AsnGluMetAlaArgIleGluGlySer-262
 268-AspTyrGlyArgAsnTrpArgArgThrAlaLeuAla-279
 289-GlyGlnAsnThrGluArgHisAla-296
 300-GlnLysAlaProAsnGluSerAsnAlaValThrGluGlnLysProGlyLeu-316
 320-LeuLeuGlyLysGlyLysAlaGluLysProAlaGluGlnProGlu-334
 342-ValAlaAsnGlySerArg-347
 350-LeuLeuAsnLysAspGlySerAlaTyrAlaGlyLysAspAlaSer-364
 370-LeuHisSerGluLeuArg-375

Hydrophilic Regions - Hopp-Woods

20-SerGlySerLysThrGluGlnProLysLeuAspTyrGlnSerArgSerHisArgLeuIleLys-40
 42-GluValProProAspLeuAsnAsnProAspGln-52
 63-GlyAlaValArgAlaSerAspLeuGluLysArgArgThrProAla-77
 80-GlnProAlaAspAlaGluValLeuLysSerValLysGlyValArgLeuGluArgAspGlySerGln-101
 107-AspGlyLysSerHisAla-112
 125-AsnGlyPheAspIleLysSerGluGluProAla-135
 139-MetGluThrGluTrpAlaGluAsnArgAlaLysIleProGlnAspSerLeuArgArgLeuPhe-159
 170-ThrGluGluArgAspLysPheIleVal-178
 180-IleGluGlnGlyLysAsnGlyVal-187
 195-LysAlaMetLysTyrGlyGlyLysAspLysAspThrThr-209
 214-SerProSerAspProAsnLeu-220
 235-AspGlyGlnGlnAlaGluAsnAlaSerAlaLysLysProThr-248
 253-AsnGluMetAlaArgIleGluGlyLysSer-262
 269-TyrGlyArgAsnTrpArgArg-275
 291-AsnThrGluArgHis-295
 302-AlaProAsnGluSerAsnAlaValThrGluGlnLysProGlyLeu-316
 320-LeuLeuGlyLysGlyLysAlaGluLysProAlaGluGlnProGlu-334
 352-AsnLysAspGlySer-356
 359-AlaGlyLysAspAlaSer-364
 370-LeuHisSerGluLeuArg-375
a531
AMPHI Regions - AMPHI
 59-SerLeuAlaGlyIleLeuAlaAspTyrValAlaGlyIleTrpGlyThr-74
 90-GlySerIleIleGlyIlePhePheSerLeuProGlyLeuIleLeuGly-105
 108-IleGlyAlaAlaAlaGly-113
 131-ThrLeuLeuGlyLeuIleVal-137

Antigenic Index - Jameson-Wolf

-502-

74-ThrLysTyrThrGlyAlaGlyLysLeuAlaVal-84
 114-GluLeuIleGluArgArgAsnMet-121

Hydrophilic Regions - Hopp-Woods
 114-GluLeuIleGluArgArgAsnMet-121
a532

AMPHI Regions - AMPHI
 6-GlyLysGlyAlaAsp-10
 27-AlaLeuLeuSerAlaValThrHisLeuLeuAlaIlePheValProMetIleThr-44
 76-TyrLeuGlnValAsnArgPheGlyPro-84
 122-SerThrLeuLeuGly-126
 147-LysValIleThrProThrVal-153
 184-ThrPheGlySerMetGluAsnLeuGly-192
 206-CysMetLysAsnPro-210
 224-GlyTyrIleValAlaLeu-229
 236-PheSerAlaLeuGlnAsnLeuPro-243
 271-LeuSerValPheGluAlaValGlyAspLeuThrAla-282
 297-ThrLysArgLeuArgGlyGlyVal-304
 307-AspGlyLeuValSerValIleAlaThrAlaLeuGly-318
 338-AlaSerArgHisValGlyLysTyr-345
 361-ArgAlaPheThrThrIleProSerProVal-370

Antigenic Index - Jameson-Wolf
 1-MetSerGlyGlnLeuGlyLysGlyAlaAspAlaPro-12
 18-LeuGluAspArgProProPheGlyAsn-26
 80-AsnArgPheGlyPro-84
 108-AlaGlyMetLysGluGlyGlyLeuThrLysAspAlaMet-120
 177-PheGlyAlaLysAlaAspGlyThrPheGlySer-187
 207-MetLysAsnProLeuLeuArg-213
 286-ValSerAspGlnProIleGluGlyGluTyrThrLysArgLeuArgGlyGlyValLeu-305
 391-ValSerHisGlyIleArgArgGluAlaVal-401
 445-LeuProGluAspLysThrGluAlaAlaValLysPheAspThrAspHisLeuGluHis-463

Hydrophilic Regions - Hopp-Woods
 4-GlnLeuGlyLysGlyAlaAspAlaPro-12
 18-LeuGluAspArgProProPhe-24

109-GlyMetLysGluGlyGlyLeuThrLysAspAlaMet-120
 179-AlaLysAlaAspGly-183
 289-GlnProIleGluGlyGluGluTyrThrLysArgLeuArgGly-302
 394-GlyIleArgArgArgGluAlaVal-401
 445-LeuProGluAspLysThrGluAlaAlaValLysPheAspThrAspHisLeuGluHis-463
a537

AMPHI Regions - AMPHI
 38-GlnIleArgAspGlyGlyAspAlaLeuHisTyrLeuAsnArgIle-52
 86-HisGlyGluHisHis-90
 109-GlyTyrLeuTyrAsnGlyValHisGlu-117
 138-ArgGlnValAspGlyLeuMetSerAlaIleTyr-148
 182-ArgPheGluArgHisCys-187
 194-ProGluAlaGlyArgLysTyrTyrArgAsnAla-204
 281-ArgProValArgValLeuThrAlaGly-289
 315-TyrThrAlaValPheAspTyrValArgAsnGlyArgArgAla-328

Antigenic Index - Jameson-Wolf
 21-ThrGlnAsnGlnSerLeuProAlaGly-29
 32-ValTyrProSerAlaProGlnIleArgAspGlyGlyAspAla-45

69-AsnSerAlaArgArgHisAlaArg-76
 80-LeuAsnProGluAspGlyHisGlyGluHisHisProAspAsnProHis-95
 99-GlnLysLeuThrGluArgThrArgLeu-107
 115-ValHisGluAsnIleSerThrGluGluGluAlaAlaGluSerSerAspSerAspIleArgThrGlnGlnArg
 GlnValAspGlyLeu-143
 152-SerLeuLeuAspArgHisThrAspGluAlaGly-162
 165-PheValargGluAsnGlyLysThr-172
 178-GlnGlyAsnGlyArgPheGluArgHisCysAlaGlnGlyArgAsnGlnProGluAlaGlyArgLysTyrTyr
 ArgAsnAlaCysHisAsnGly-208
 212-TyrThrAspGluAlaMetPro-218
 237-PheHisIleGluArgProAspProValProGluTyrGluIleThrGlyAsnProAlaSer-256
 258-AspPheSerGluAlaAlaGly-264
 266-IleThrMetLysSer-270
 274-TyrGlnGlyLysAsnGluIleArgPro-282
 287-ThrAlaGlyAsnAspProAsnGlyArgLeuThr-297
 320-AspTyrValArgAsnGlyArgArgAlaGlnAla-330
 334-PheArgThrArgLysProAspTyrProTyr-343
 345-GluValAsnGlyGluThrLeuAlaValArgLysGlyGluLys-359
 364-TrpArgGlyArgTrpCysLeu-370
 376-TyrThrTyrArgGlnArgProGlySerArgLeuSerIleGlyArgHisLysAlaGlyGly-395
 401-AspGlyMetAlaGlySer-406
 408-IleThrLeuAlaProGluGlyGluThrGluArgGly-419

Hydrophilic Regions - Hopp-Woods

37-ProGlnIleArgAspGlyGlyAsp-44
 69-AsnSerAlaArgArgHisAlaArg-76
 81-AsnProGluAspGlyHisGlyGluHisHisProAsp-92
 100-LysLeuThrGluArgThrArgLeu-107
 119-IleSerThrGluGluGluAlaAlaGluSerSerAspSerAspIleArgThrGlnGlnArgGlnValAsp-14
 1
 152-SerLeuLeuAspArgHisThrAspGluAlaGly-162
 165-PheValArgGluAsnGlyLys-171
 179-GlyAsnGlyArgPheGluArgHisCysAlaGlnGlyArgAsnGlnProGluAlaGlyArgLysTyrTyrArg
 -202
 238-HisGlyGluArgProAspProValProGlu-247
 258-AspPheSerGluAlaAlaGly-264
 266-IleThrMetLysSer-270
 275-GlnLysLysAsnGluIleArgPro-282
 289-GlyAsnAspProAsnGlyArg-295
 323-ArgAsnGlyArgArgAlaGlnAla-330
 334-PheArgThrArgLysProAsp-340
 352-LeuAlaValArgIlysGlyGluLys-359
 377-ThrTyrArgGlnArgProGlySer-384
 387-SerIleGlyArgHisLysAla-393
 412-ProGluGlyGluThrGluArgGly-419
 a538

AMPHI Regions - AMPHI

42-ThrAlaLeuAlaGluAlaValGluLeuValLysAlaAlaGly-55
 79-LysAlaAlaGluLeuSerGluAlaValAla-88
 105-GlnGluArgAsnLeuGluLysIleLeuGlnCysArgValLeuAspArgVal-121
 145-GlnLeuSerHisLeuAlaGlyArgLeuIleArgGlyTyrGlyHisLeuGln-161
 188-IleAsnAlaLeuLysLysGlnLeuAla-196
 211-SerGlyThrIleLysThrPheAlaLeuValGlyTyrThrAsn-224
 231-PheAsnArgLeuThrLys-236
 271-GlyPheValSerAspLeuProHisLysLeuIleSerAlaPheSerAlaThrLeuGlu-289

307-AsnSerGlyGlnGlnIleGluAspValGluAsnValLeuGlnGluIleHis-323
 365-GluAsnThrGlyIleAspAlaLeuArgGluAlaIleAlaGluTyrCysAla-381

Antigenic Index - Jameson-Wolf

1-MetThrGlyArgThrGlyArgAsnGlySerThrGlnAlaGlnProGluArgVal-18
 24-MetLeuAspLysAspGlyThrGlySerSerAlaThrArgLeuAsnGly-39
 48-ValGluLeuValLys-52
 54-AlaGlyGlyAspSerValArgValGluThrAlaLysArgAspArgProHisThr-71
 77-ThrGlyLysAlaAlaGluLeuSerGlu-85
 100-GluLeuThrProThrGlnGluArgAsnLeuGluLys-111
 129-AlaArgArgAlaArgThrGlnGluGlyArgLeuGlnVal-141
 161-GlnSerGlnArgGlyGlyIleGlyMetLysGlyProGlyGluThrLysLeuGluThrAspArgArgLeuIle-184
 189-AsnAlaLeuLysLysGlnLeuAlaAsnLeuLysLysGlnArgAlaLeuArgArgLysSerArgGluSerGlyThrIleLysThr-216
 224-AsnValGlyLysSerSerLeu-230
 233-ArgLeuThrLysSerGlyIleTyrAla-241
 257-TyrIleSerProGluCys-262
 287-ThrLeuGluGluThrAlaGln-293
 304-AlaalaProAsnSerGlyGlnGlnIleGluAspValGluAsnValLeu-319
 323-HisAlaGlyAspIlePro-328
 333-TyrAsnLysThrAspLeuLeuProSerGluGluGlnAsnThrGlyIle-348
 365-GluAsnThrGlyIleAspAlaLeuArgGluAlaIle-376
 381-AlaAlaAlaProAsnThrAspGluThrGluMetPro-392

Hydrophilic Regions - Hopp-Woods

1-MetThrGlyArgThrGlyArgAsnGlySerThr-11
 13-AlaGlnProGluArg-17
 25-LeuAspLysAspGlyThrGly-31
 48-ValGluLeuValLys-52
 54-AlaGlyGlyAspSerValArgValGluThrAlaLysArgAspArgProHis-70
 78-GlyLysAlaAlaGluLeuSerGlu-85
 101-LeuThrProThrGlnGluArgAsnLeuGluLys-111
 129-AlaArgArgAlaArgThrGlnGluGlyArgLeuGlnVal-141
 161-GlnSerGlnArgGlyGlyIle-167
 171-GlyProGlyGluThrLysLeuGluThrAspArgArgLeuIle-184
 189-AsnAlaLeuLysLysGlnLeuAlaAsnLeuLysLysGlnArgAlaLeuArgArgLysSerArgGluSerGlyThr-213
 287-ThrLeuGluGluThrAlaGln-293
 310-GlnGlnIleGluAspValGluAsnValLeu-319
 337-AspLeuLeuProSerGluGluGlnAsn-345
 370-AspAlaLeuArgGluAlaIle-376
 384-ProAsnThrAspGluThrGluMetPro-392
a539-2

AMPHI Regions - AMPHI

18-ArgGlnArgGluHisHisArgLeu-25
 44-LeuValGlyGlyPheAspPheLeuArgValIleGlyCysGlyGlyValAlaTyrLeuProAspPheGlnGln-67

Antigenic Index - Jameson-Wolf

1-MetGluAspLeuGlnGluIleGly-8
 15-LysValGlyArgGlnArgGluHisHisArgLeuHisHisProGlnProGlyAsnGlyGluAlaAspAsp-37
 63-ProAspPheGlnGlnAsnValGlyLysAlaAsp-73
 77-ValProAspAspAlaAlaAla-83
 88-IleGluValAspAlaAspAspAlaValCys-97

102-LeuPheAspGlnProAspAlaGlyGlyAlaGlyAspAlaAlaGluHis-117

Hydrophilic Regions - Hopp-Woods

1-MetGluAspLeuGlnGluIleGly-8
 15-LysValGlyArgGlnArgGluHisHisArg-24
 31-GlyAsnGlyGluAlaAspAsp-37
 69-ValGlyLysAlaAsp-73
 78-ProAspAspAlaAlaAla-83
 88-IleGluValAspAlaAspAspAlaValCys-97
 102-LeuPheAspGlnProAspAlaGlyGlyAlaGlyAspAlaAlaGluHis-117
a542

AMPHI Regions - AMPHI

6-ArgIleArgArgCysSerVal-12

Antigenic Index - Jameson-Wolf

1-MetProLysTrpSerArgIleArgArgCysSerVal-12
 20-SerAlaSerArgLeuThrCys-26
 36-MetArgLeuLysSerSerAspGlyIleAlaSer-46
 55-GlyProMetProSerGluThrValSerHisLysSerAspSerSerArgAsnThrSerAlaSerArgArgAsnV
 alSerProLysCysProPhe-85
 89-PheArgGlnAspAlaAlaLysProArgArgPheGlyGlyLys-102
 106-LeuThrGlySerArg-110

Hydrophilic Regions - Hopp-Woods

5-SerArgIleArgArgCysSer-11
 36-MetArgLeuLysSerSerAspGlyIleAla-45
 57-MetProSerGluThrValSerHisLysSerAspSerSerArgAsnThrSerAlaSerArgArgAsnValSerP
 ro-81
 89-PheArgGlnAspAlaAlaLysProArgArgPheGlyGly-101
a544-2

AMPHI Regions - AMPHI

11-AlaLeuIleGlyIleLeu-16
 55-PheTrpPheProSerCysProGlyCysValSerGluMetProLysIleIleLysThrAla-74
 85-LeuAlaValAlaGlnProIleAspProIleGluSerValArgGlnTyrVal-101
 116-LysAlaValGlyGlnAlaPhe-122

Antigenic Index - Jameson-Wolf

1-MetLysLysIleLeu-5
 22-IleProAspSerLysThrAlaPro-29
 35-AspLeuHisGlyLysThrValSerAsnAlaAspLeuGlnGly-48
 59-SerCysProGlyCys-63
 66-GluMetProLysIleIleLysThrAlaAsnAspTyrLysAsnLysAsnPhe-82
 90-ProIleAspProIleGluSerValArgGlnTyrValLysAspTyrGly-105
 113-AspAlaAspLysAlaVal-118
 133-IleGlyLysLysGlyGluIleLeu-140
 144-ValGlyGluProAspPheGlyLysLeuTyrGlnGluIleAspThr-158

Hydrophilic Regions - Hopp-Woods

1-MetLysLysIleLeu-5
 23-ProAspSerLysThr-27
 56-GluMetProLysIleIleLysThrAlaAsnAspTyrLysAsnLysAsn-81
 92-AspProIleGluSerValArgGlnTyrValLys-102
 113-AspAlaAspLysAlaVal-118
 133-IleGlyLysLysGlyGluIle-139
a547

AMPHI Regions - AMPHI

7-PheAsnLysThrValAlaSerPheAlaGlnIleValGluThrPheAspVal-23
 62-AsnArgSerPheLys-66
 105-LeuHisIlePheThrAsnIleLys-112

Antigenic Index - Jameson-Wolf

3-ValAspAsnGlyPheAsnLysThrVal-11
 35-GlnMetLysGlnArgCysGlyTrp-42
 53-PheProArgCysGlyPheGluIleProAsnArgSerPheLysGlu-67
 76-LeuSerGluArgPheArgThrAsnAlaGluValGluIle-88

Hydrophilic Regions - Hopp-Woods

36-MetLysGlnArgCys-40
 60-IleProAsnArgSerPheLysGlu-67
 76-LeuSerGluArgPheArgThrAsnAlaGluValGluIle-88
a548

AMPHI Regions - AMPHI

14-ValLeuAlaAlaLeuAlaAlaCysLys-22
 39-SerAlaAlaGluAsnAlaAlaLysProGlnThrArgGlyThrAspMetArgLysGluAspIleGlyGlyAspPheThrLeuThrAspGlyGluGlyLysProPheAsn-74
 89-PheThrHisCysProAspValCysProThr-98
 103-TyrSerAspThrLeuLysGlnLeuGlyGlyGln-113
 132-GluIleIleGlyLysTyrAlaLys-139

Antigenic Index - Jameson-Wolf

21-CysLysProGlnAspAsnSerAlaAla-29
 39-SerAlaAlaGluAsnAlaAlaLysProGlnThrArgGlyThrAspMetArgLysGluAspIleGlyGlyAspPheThrLeuThrAspGlyGluGlyLysProPheAsn-74
 76-SerAspLeuLysGly-80
 91-HisCysProAspValCysPro-97
 104-SerAspThrLeuLysGlnLeuGlyGlyGlnAlaLysAspValLys-118
 124-IleAspProGluArgAspThrProGluIleIleGlyLysTyrAlaLysGlnPheAsnProAspPhe-145
 150-AlaThrGlyAspGlnAsnLeu-156
 169-LysValAsnGlnLysAspAspSerGluAsnTyrLeu-180
 189-LeuIleAspLysAsnGlyGlu-195
 200-SerProTyrGlySerGluProGluThrIleAlaAlaAspVal-213

Hydrophilic Regions - Hopp-Woods

22-LysProGlnAspAsnSerAla-28
 39-SerAlaAlaGluAsnAlaAlaLysProGlnThrArgGlyThrAspMetArgLysGluAspIleGlyGly-61
 64-ThrLeuThrAspGlyGluGlyLysPro-72
 76-SerAspLeuLysGly-80
 111-GlyGlyGlnAlaLysAspValLys-118
 124-IleAspProGluArgAspThrProGluIleIle-134
 151-ThrGlyAspGlnAsn-155
 169-LysValAsnGlnLysAspAspSerGluAsnTyrLeu-180
 191-AspLysAsnGlyGlu-195
 203-GlySerGluProGluThrIleAlaAlaAspVal-213
a552-1

AMPHI Regions - AMPHI

18-CysThrAsnAlaPheAlaAlaPro-25
 29-AlaSerLeuAlaArgTrpLeuAspThr-37
 41-AspArgAspIleGluLysAsnMetIleGluGlyPheAsnAlaGlyPheLysProTyrAlaAspLysAlaLeuAlaGluMet-67
 75-AlaAlaGluAlaPheAsnArgTyrArgGluAsnVal-86
 89-AspLeuIleThrProGluValLys-96

116-IleAspGlyMetIleAla-121
 139-IleLysLysSerMetSerGluIle-146
 154-SerGlyLysIleAlaGlnHisHisLeuProGluPheThrGluGluLeuArgArg-171

Antigenic Index - Jameson-Wolf

25-ProProSerAspAlaSerLeu-31
 35-LeuAspThrGlnAsnPheAspArgAspIleGluLysAsnMetIle-49
 53-AsnAlaGlyPheLysProTyrAlaAspLysAlaLeuAlaGluMetProGluAlaLysLysAspGlnAlaAla-76
 78-AlaPheAsnArgTyrArgGluAsnValLeu-87
 90-LeuIleThrProGluValLysGlnAlaVal-99
 105-LysAsnAlaArgGluIleTyrThrGlnGluGluIleAspGly-118
 131-VaiValAlaLysAsnProArgLeuIleLysLysSerMetSer-144
 153-LeuSerGlyLysIle-157
 164-GluPheThrGluGluLeuArgArg-171
 173-IleCysGlyGlyLysAsnProAspAlaGlyCysLysGlnAlaGlyGlnValGlyLysArgHisGlnLys-195
 5

Hydrophilic Regions - Hopp-Woods

26-ProSerAspAlaSerLeu-31
 38-GlnAsnPheAspArgAspIleGluLysAsnMetIle-49
 58-ProTyrAlaAspLysAlaLeuAlaGluMetProGluAlaLysLysAspGlnAlaAla-76
 78-AlaPheAsnArgTyrArgGluAsnValLeu-87
 90-LeuIleThrProGluValLysGlnAlaVal-99
 105-LysAsnAlaArgGluIleTyrThr-112
 114-GluGluIleAspGly-118
 131-VaiValAlaLysAsnProArgLeuIleLysLysSerMetSer-144
 164-GluPheThrGluGluLeuArgArg-171
 176-GlyLysAsnProAspAlaGlyCysLysGlnAlaGlyGlnValGlyLysArgHisGlnLys-195
 a554

AMPHI Regions - AMPHI

38-PheGlnThrProGluThrLeu-44
 71-AlaAlaLeuThrGlnLeuMet-77
 110-ArgMetPheValArgProGlyAspThrVal-119
 124-LeuLeuLysGlyMet-128
 148-SerIleGluAsnPheValGlnGlnMetAsnLysGlu-159
 185-AlaLysAspLeuAlaClnLeuSerGluAlaLeuMetArgAspPheProGluTyrTyrProLeuPheSer-20
 7
 296-ThrValAlaGlnIle-300
 331-GluGlnIleLeuGluThrIleGlnProIleProAla-342

Antigenic Index - Jameson-Wolf

23-AlaSerProAlaProAsnArgProThrAla-32
 37-ThrPheGlnThrProGluThr-43
 53-LeuGlnSerLysGln-57
 61-AlaLysAsnIleAsnThrProValGlu-69
 84-LysAsnMetLysSerGlyAsnIleArgSerGluGluAsnLeuLysIleProGlu-101
 104-TrpAlaSerGluGlySerArgMetPheValArgProGlyAspThrValSerThrAspLysLeuLeu-125
 143-ArgLeuGlyAsnGlySerIleGluAsnPhe-152
 156-MetAsnLysGluAlaArgArgLeuGlyMetLysAsnThrValPheLysAsnProThrGlyLeuSerArgGlu
 GlyGlnValSerThrAlaLysAspLeuAlaGln-190
 194-AlaLeuMetArgAspPheProGluTyrTyr-203

214-LysAsnIleGluGlnAsnAsnArgAsnIleLeu-224

226-TyrArgAspAsnAsnValAsnGlyLeuLysAlaGlyHisThrGluSerGlyGlyTyrAsn-245

250-TyrSerGlyAsnGlyArgHis-256

262-LeuGlySerGluSerAlaGluThrArgAlaSerAspAsnSerLys-276

285-PheAspThrProLysIleTyrProLysGlyLysThr-296

302-IleSerGlyGlySerLysLysThrValArg-311

323-ProHisLysGluAlaLysMetAlaGluGlnIleLeu-334

342-AlaProValLysLysGlyGlnIleLeuGlyLysIleLysIleArgGlnAsnGlyTyr-360

362-IleAlaGluLysGluIleValAla-369

371-GluAsnValLysLysArgSerArgTrpGlnArg-381

Hydrophilic Regions - Hopp-Woods

26-AlaProAsnArgProThrAla-32

85-AsnMetLysSerGlyAsnIleArgSerGluGluAsnLeuLysIleProGlu-101

107-GluGlySerArgMetPheValArgProGlyAspThrValSerThrAspLysLeuLeu-125

156-MetAsnLysGluAlaArgLeuGlyMet-165

174-ThrGlyLeuSerArgGluGlyGlnValSerThrAlaLysAspLeuAlaGln-190

214-LysAsnIleGluGlnAsnAsnArg-221

227-ArgAspAsnAsnValAsn-232

237-GlyHisThrGluSerGly-242

264-SerGluSerAlaGluThrArgAlaSerAspAsnSerLys-276

289-LysIleTyrProLysGlyLysThr-296

304-GlySerLysLysThrValArg-311

323-ProHisLysGluAlaLysMetAlaGluGlnIleLeu-334

343-ProValLysLysGlyGlnIle-349

353-IleLysIleArgGln-357

362-IleAlaGluLysGluIleValAla-369

371-GluAsnValLysLysArgSerArgTrp-379

a556

AMPHI Regions - AMPHI

61-IleGluArgLeuLys-65

Antigenic Index - Jameson-Wolf

1-MetAspAsnLysThrLysLeuArgLeu-9

52-ThrSerArgArgGlnGlnArgGlnPheIleGluArgLeuLysLysPheAspIleAspProGluLysGlyArgIleAsnGluAlaAsnLeuArgArgMetTyrHisSerGlyGlyGlnHisGlnLysAspAla-95

102-SerGlnLysCysSerValAspGluAlaHisAlaMetPheLysLysArgProThrArgGlnGluIleAsn-124

4

127-AlaAlaLysGlnSerArgGlyGlnLysArgProHisArg-139

Hydrophilic Regions - Hopp-Woods

1-MetAspAsnLysThrLysLeuArgLeu-9

53-SerArgArgGlnGlnArgGlnPheIleGluArgLeuLysLysPheAspIleAspProGluLysGlyArgIleAsnGluAlaAsnLeuArgArgMetTyr-85

90-GlnHisGlnLysAspAla-95

105-CysSerValAspGluAlaHisAlaMetPheLysLysArgProThrArgGlnGluIleAsn-124

127-AlaAlaLysGlnSerArgGlyGlnLysArgProHisArg-139

a557

AMPHI Regions - AMPHI

22-GlyAlaAspGlyIle-26
 55-SerGlyArgValAspAspAlaAla-62

Antigenic Index - Jameson-Wolf

20-LeuLysGlyAlaAspGlyIleSerProProLeuThrTyrArgSerTrpHisIleGluGlyGlyGlnAlaLeu-
 43
 54-AlaSerGlyArgValAspAspAlaAlaGly-63
 68-LeuArgIleAspSerValSerGlnAsnLysGluThrTyrThr-81
 100-GlnValLeuLysArgGlyGluProValGlyLysProMet-112
 123-AlaAspAsnGluIleLeuGlyLysGlnGluGluGluAla-135
 141-MetArgGlnAspAlaAlaGluGlnIleValArg-151

Hydrophilic Regions - Hopp-Woods

21-LysGlyAlaAspGlyIle-26
 56-GlyArgValAspAspAlaAlaGly-63
 68-LeuArgIleAspSerValSerGlnAsnLysGluThrTyrThr-81
 100-GlnValLeuLysArgGlyGluProValGly-109
 126-GluIleLeuGlyLysGlnGluGluGluAla-135
 141-MetArgGlnAspAlaAlaGluGlnIleValArg-151
 a560

AMPHI Regions - AMPHI

30-PheArgAspGlyAlaHisLysMetAlaArgValTrpValLysIleLeu-45
 167-ArgMetAlaLysMetPhe-172
 192-PheLeuLysTyrProGlyGlu-198
 218-MetGlyLysCysGluHisLeuIleGlu-226

Antigenic Index - Jameson-Wolf

29-ProPheArgAspGlyAlaHisLysMet-37
 61-GlyAlaGluAsnIleProAspArgProAla-70
 76-HisGlnSerGlyTrpGlu-81
 95-ValAlaLysArgGluLeuPhe-101
 116-IleGlyIleAspArgAsnAsnArgArgGluAlaAsnGluGlnLeuIle-131
 134-GlyLeuAlaArgLysAsnGluGlyTyr-142
 148-ProGluGlyThrArgLeuAlaProGlyLysArgGlyLysTyrLysLeuGlyGly-165
 182-AsnSerGlyGluPheTrpProLysAsnSerPheLeuLysTyrProGlyGluIle-199
 209-HisAlaSerGlySerGluAlaGluLeuMetGlyLysCysGluHisLeuIle-225
 242-MetProSerGluThrAla-247

Hydrophilic Regions - Hopp-Woods

29-ProPheArgAspGlyAlaHisLysMet-37
 64-AsnIleProAspArgProAla-70
 95-ValAlaLysArgGluLeuPhe-101
 116-IleGlyIleAspArgAsnAsnArgArgGluAlaAsnGluGlnLeuIle-131
 134-GlyLeuAlaArgLysAsnGlu-140
 149-GluGlyThrArgLeuAlaProGlyLysArgGlyLysTyrLysLeuGlyGly-165
 211-SerGlySerGluAlaGluLeuMetGlyLysCysGluHisLeuIle-225
 242-MetProSerGluThrAla-247
 a561

AMPHI Regions - AMPHI

22-GlyLeuTrpValGlyLeuAlaAla-29
 46-AlaSerValIleGluGluAlaGlyAsn-54
 79-ValAlaGluPheGluLysSerLeuLysArgIleAlaGln-91
 128-SerTyrArgArgProThrGlnVal-135
 172-MetThrLeuValSerSer-177
 188-ValIleArgProLeuGlnAlaLeuArgGluGlyAlaGluArgIleGlyArgArgCysPheAspIle-209

219-PheLysGlnValGlyArgCysPheAsnGlnMet-229
 238-AspAspLeuGluGlyGlnValAlaGluGlnThrArgSerLeuGluLysGln-254
 265-ThrArgAspLeuHisGlnSer-271
 275-GlnGlnAlaAlaGluHisPhe-281
 283-AsnArgIleLeuPro-287
 317-AlaSerAspLeuGlyLysTyrHisGlu-325
 339-ArgLeuLeuLeuSerPheProAsnGly-347
 358-LeuGlnThrLeuGlyArgGlnLeuGly-366
 392-GlnGlyLeuHisAspSerIleAlaGlnAlaLeuThr-403
 434-GlyValGlnGluCysTyrGluAspValArgGluLeu-445
 456-LysPheProGluAlaValAlaAspLeuPheSerArgPheThrGlnGlnThrGly-474
 504-LeuSerAsnIleArgLysHisAla-511
 540-ThrGluAsnIleGlyGluProSer-547

Antigenic Index - Jameson-Wolf

6-ArgPheSerAspGlyIleSer-12
 48-ValIleGluGluAlaGlyAsn-54
 66-AlaGlyGluGlySerProArgAlaGlnIleAspAsnGlnValAlaGluPheGluLysSerLeuLysArgIleA
 laGlnSerAspAlaIleHisPro-97
 99-IleProSerAspThrProLeu-105
 124-ProProLeuGlnSerTyrArgArgProThrGlnValAspLeu-137
 152-GluAsnAlaAsnGluLysAsnThr-159
 193-GlnAlaLeuArgGluGlyAlaGluArgIleGlyArgArgCysPheAsp-208
 210-ProValProGluGlyGlyThrProGluPheLysGlnValGlyArgCysPheAsnGlnMetGlyGlyArgLeu
 LysIleLeuTyrAspAspLeuGluGlyGlnValAlaGluGlnThrArgSerLeuGluLysGlnAsnGlnAsnLeu-
 258
 263-GlnThrThrArgAspLeuHisGlnSerTyrIle-273
 289-ValGlyAlaAspSerGlyArgValCysLeuAspGlyGlySerAsp-303
 310-HisAlaAspCysGlyThrAlaAlaSerAspLeuGlyLysTyrHisGlu-325
 332-TyrGlnAsnGluThrLeuGly-338
 344-PheProAsnGlyIleSerLeuAspGluAspAspArgIleLeu-357
 360-ThrLeuGlyArgGlnLeu-365
 371-GlyAlaIleGlnGluGluGluLysArgLeu-380
 384-LeuGlnGluArgAsnLeu-389
 394-LeuHisAspSerIle-398
 415-AlaPheAlaGluAsnLysArgGluGluAlaAlaGlu-426
 434-GlyValGlnGluCysTyrGluAspValArgGlu-444
 450-ArgThrLysIleSerAsnLysGluPheProGluAlaVal-462
 468-ArgPheThrGlnGlnThrGlyThrThrVal-477
 480-AlaTrpGluAsnGlyThrHisLeuProThrGlnAspGluGlnLeu-494
 503-SerLeuSerAsnIleArgLysHisAlaHis-512
 519-ArgLeuLeuLysGlnAspGlySerPheThr-528
 531-IleGlnAspAsnGlyGlnGluGlyAspThrGluAsnIleGlyGluProSerGlySerHis-550
 556-MetGlnGluArgAlaLysArgIle-563
 568-GluIleArgSerGlnAlaGlnGlnGlyThrThr-578
 584-AlaSerGluGluSerLeuLys-590

Hydrophilic Regions - Hopp-Woods

48-ValIleGluGluAlaGlyAsn-54
 68-GluGlySerProArgAlaGlnIle-75
 78-GlnValAlaGluPheGluLysSerLeuLysArgIleAlaGln-91
 128-SerTyrArgArgProThrGln-134
 152-GluAsnAlaAsnGluLys-157
 193-GlnAlaLeuArgGluGlyAlaGluArgIleGlyArgArgCysPhe-207
 213-GluGlyGlyThrProGluPheLysGlnValGly-223

235-IleLeuTyrAspAspLeuGluGlyGlnValAlaGluGlnThrArgSerLeuGluLysGlnAsnGln-256
 264-ThrThrArgAspLeuHis-269
 290-GlyAlaAspSerGlyArgValCysLeu-298
 312-AspCysGlyThrAlaAlaSerAspLeuGlyLysTyrHisGlu-325
 349-SerLeuAspGluAspAspArgIleLeu-357
 371-GlyAlaLysGlnGluGluGluLysArgLeu-380
 384-LeuGlnGluArgAsnLeu-389
 415-AlaPheAlaGluAsnLysArgGluGluAlaAlaGlu-426
 437-GluCysTyrGluAspValArgGlu-444
 451-ThrLysIleSerAsnLysGluPheProGluAlaVal-462
 488-ProThrGlnAspGluGlnLeu-494
 503-SerLeuSerAsnIleArgLysHisAlaHis-512
 519-ArgLeuLeuLysGlnAspGly-525
 533-AspAsnGlnGlyPheAspThrGluAsnIleGlyGluProSerGly-548
 556-MetGlnGluArgAlaLysArgIle-563
 568-GluIleArgSerGlnAlaGln-574
 584-AlaSerGluGluSerLeuLys-590
a562

AMPHI Regions - AMPHI
 48-TrpSerLeuValSerAlaTrpMetValValIle-58
 84-LeuGluThrThrVal-88
 90-SerAlaValArgMetLeu-95
 97-PheThrProTyrThrThrValAlaSerThrSer-107
 116-ThrPhePheAlaProLeuSerArgThrLeu-125
 132-AsnAlaProValHisSerMetThrLysSerThrProSerSerPheHis-147
 183-ValSerAsnLeuValArgTrpAlaLeu-191

Antigenic Index - Jameson-Wolf
 10-AsnSerGlySerThrLysProThr-17
 32-ProLeuArgAlaArgArgArgSerLeuTrpArg-42
 72-AlaThrGlyGluArgGlnLeuVal-79
 105-SerThrSerSerProProGlyAlaGluMet-114
 138-MetThrLysSerThrProSerSerPheHisGlySerSerAla-151
 154-ArgValXxxLysXxxGlyIle-160
 167-ArgLeuProProSerTrpAspThrSerAlaSerLysArgProCysThr-182

Hydrophilic Regions - Hopp-Woods
 33-LeuArgAlaArgArgArgSerLeuTrp-41
 72-AlaThrGlyGluArgGlnLeuVal-79
 110-ProGlyAlaGluMet-114
 139-ThrLysSerThrPro-143
 175-SerAlaSerLysArgProCysThr-182
a565

AMPHI Regions - AMPHI
 50-AlaThrCysThrArgAlaMetSerLysSer-59
 66-SerSerTrpAlaArg-70
 84-IleSerThrTrpSerAspLeu-90
 103-AspPheMetSerGlnLeuAspLeuThr-111
 140-SerHisSerSerGluThrIleSerSerCysProAlaMetAlaSerIleThrLysProAsn-159
 184-AlaAsnThrThrSerAlaPhe-190

Antigenic Index - Jameson-Wolf
 1-MetAspSerThrLeuSerLysThrCys-9
 23-PheAlaArgProArgProAlaAlaSerAsnThrSerLeu-35
 37-PheAlaSerProAsnAspThrGlySer-45

-512-

55-AlaMetSerLysSerSerAlaLysTyrGly-64
 67-SerTrpAlaArgThrArgProThrValCysProProLeuProLysProThrIle-84
 99-CysArgSerSerAspPheMetSer-106
 109-AspLeuThrLysArgProThrSerAlaSerLeuProProLysArgLysGlyAlaIle-127
 129-IleAspSerArgThrAlaAla-135
 140-SerHisSerSerGluThrIleSerSerCysProAla-151
 155-IleThrLysProAsnSerProProCysAlaArgTyr-166
 170-LeuArgLeuSerProThrGlu-176
 194-SerIleAlaAsnSerIleAsnThrCysArgGlnProPro-206

Hydrophilic Regions - Hopp-Woods

24-AlaArgProArgProAlaAla-30
 39-SerProAsnAspThrGlySer-45
 55-AlaMetSerLysSerSerAla-61
 69-AlaArgThrArgPro-73
 100-ArgSerSerAspPhe-104
 109-AspLeuThrLysArgProThrSer-116
 119-LeuProProLysArgLysGlyAlaIle-127
 129-IleAspSerArgThr-133
 141-HisSerSerGluThrIleSer-147
 156-ThrLysProAsnSer-160
a566

Antigenic Index - Jameson-Wolf

35-TyrProAsnCysGlyAlaAspGlyAlaGlyGlyLysGlyHis-48
 61-AlaValGlyGluGlyGlyValValAlaAspAspValAlaArgAlaAspGlyGlyLysAlaAspGlyGlyArgIleAlaArg-89
 105-SerAlaGluArgAlaGlyAspAspPheAla-114

Hydrophilic Regions - Hopp-Woods

39-GlyAlaAspGlyAlaGlyGlyLysGlyHis-48
 63-GlyGlyGluGluGlyGlyValValAlaAspAspValAlaArgAlaAspGlyGlyLysAlaAspGlyGlyArgIleAlaArg-89
 105-SerAlaGluArgAlaGlyAspAspPheAla-114
a567

AMPHI Regions - AMPHI

60-GlyValTyrGlnVal-64
 98-GluLeuValGlnGluIleAlaArgGluVal-107
 112-AlaLeuLysAlaVal-116
 154-TyrAlaLeuGluGlyIleSerAspLeuIleAlaThrValArgLysIleArgGln-171
 180-ThrGlyIleValArg-184
 195-AlaGluValSerGluGlnLeuArgSerHisPheGlyAspLeuLeu-209

Antigenic Index - Jameson-Wolf

10-AsnGlnLysGlyGlyValGlyLysThrThrThrThr-20
 28-LeuAlaSerArgGlyLysArg-34
 38-ValAspLeuAspProGlnGlyAsnAlaThrThrGlySerGlyIleAspLysAlaSerLeuGlnSerGly-60
 67-GlyAspAlaAspValLysSerAlaAlaValArgSerLysGluGlyGlyTyr-83
 95-AlaGluIleGluLeu-99
 101-GlnGluIleAlaArgGluValArgLeuLysAsnAlaLeu-113
 115-AlaValAlaGluAspTyrAsp-121
 127-CysProProSerLeu-131
 164-AlaThrValArgLysIleArgGlnAlaValAsnProAspLeuAspIle-179
 185-ThrMetTyrAspSerArgSerArgLeuValAlaGluValSerGluGlnLeuArgSerHisPheGlyAspLeu-208
 214-IleProArgAsnIleArgLeuAlaGluAlaProSerHisGly-227

235-AlaGlnAlaLysGlyAlaLys-241
 248-AspGluLeuMetAla-252

Hydrophilic Regions - Hopp-Woods

10-AsnGlnLysGlyGlyValGlyLys-17
 28-LeuAlaSerArgGlyLysArg-34
 40-LeuAspProGlnGly-44
 50-SerGlyIleAspLysAlaSerLeu-57
 67-GlyAspAlaAspValLysSerAlaAlaValArgSerLysGluGlyGly-82
 95-AlaGluIleGluLeu-99
 101-GlnGluIleAlaArgGluValArgLeuLysAsnAlaLeu-113
 115-AlaValAlaGluAspTyrAsp-121
 164-AlaThrValArgLysIleArgGln-171
 175-ProAspLeuAspIle-179
 186-MetTyrAspSerArgSerArgLeuValAlaGluValSerGluGlnLeuArg-202
 216-ArgAsnIleArgLeuAlaGluAlaProSer-225
 235-AlaGlnAlaLysGlyAlaLys-241
 248-AspGluLeuMetAla-252
a568

AMPHI Regions - AMPHI

31-SerIlePheArgArg-35
 48-LysAlaCysLysAsn-52
 70-GluLysAlaAsnThrValArgTyr-77
 81-SerLeuAlaGlnCysPheThr-87
 111-ArgProLeuProSerIleIleThrAla-119
 168-GluPheValGlyPheGlyAsnValPheValGlyGlnPheLeuAsnArgPhePhe-185
 199-GluPhePheAspValVal-206
 227-PheAsnGlnValPheAlaAlaPheLeu-235
 240-HisArgHisAlaAspGlnValAlaAspSerCysArgValGlnSerGln-255

Antigenic Index - Jameson-Wolf

22-IleArgLeuLysArgSerArgLeuProSerIlePhe-33
 38-PheSerCysArgArgArgThrCysPheCysLysAlaCysLysAsnSerProIleArgAsnGluThrSerSerGlyArgArgGlnPheSerValGluLysAlaAsnThr-74
 90-SerAsnAlaSerLysProArgLeu-97
 99-ProIleMetArgGlyArgLysArgPhePheAla-109
 140-PheArgGlySerAlaPheLysCysArgLeuAsnAlaGluProCysArg-155
 213-AlaAspGlyAspAla-217
 236-GlyGlnHisGlyHisArgHisAlaAspGlnValAlaAspSerCysArgValGlnSerGln-255

Hydrophilic Regions - Hopp-Woods

22-IleArgLeuLysArgSerArgLeu-29
 40-CysArgArgArgThrCysPhe-46
 48-LysAlaCysLysAsnSerProIleArgAsnGluThrSerSerGlyArgArgGlnPheSerValGluLysAlaAsnThr-74
 92-AlaSerLysProArgLeu-97
 101-MetArgGlyArgLysArgPhePheAla-109
 143-SerAlaPheLysCysArgLeuAsnAlaGluProCysArg-155
 238-HisGlyHisArgHisAlaAspGlnValAlaAspSerCysArgVal-252
a569-2

AMPHI Regions - AMPHI

29-AlaAlaPheCysGlyLeuIleAlaLeuThrAlaLeuTrpGluTyrAlaArgMetAlaGlyLeuCysLys-51
 86-PheTrpLeuAlaValMetPro-92
 161-IleAlaArgAlaIleSerProGlyLysSerTrpGluGlyAlaIle-175
 203-ThrValLeuIleGlyLeu-208

210-LeuThrValValSerValCysGlyAspLeuLeuGluSerTrpLeuLys-225

Antigenic Index - Jameson-Wolf

50-CysLysThrGluThrAsnHis-56
 98-LysTrpArgLeuAsnGlyGlyTrp-105
 124-SerLeuArgProHisProAspAspAlaLeu-133
 154-LysAlaLeuGlyLysHisLysIleAlaArg-163
 165-IleSerProGlyLysSerTrpGlu-172
 227-AlaAlaGlyIleLysAspSerSerAsnLeuLeuProGlyHis-240
 242-GlyValPheAspArgThrAspSer-249

Hydrophilic Regions - Hopp-Woods

50-CysLysThrGluThr-54
 127-ProHisProAspAspAlaLeu-133
 155-AlaLeuGlyLysHisLysIleAlaArg-163
 227-AlaAlaGlyIleLysAspSerSerAsn-235
 243-ValPheAspArgThrAspSer-249
 a570

AMPHI Regions - AMPHI

5-ArgAlaPheAlaAlaAlaLeuIleGlyLeu-15
 22-HisAlaAspThrPheGlnLysIleGlyPheIleAsn-33
 43-GlnAlaArgLysIleGlnLysThrLeuAspSer-53
 60-AspGluLeuGlnLysLeuGln-66
 81-LeuLysAspAlaLysLys-86
 122-LeuGlnGlnAsnAlaAsnArgValIleValLysIle-133

Antigenic Index - Jameson-Wolf

33-AsnThrGluArgIleTyrLeuGluSerLysGlnAlaArgLysIleGlnLysThrLeuAspSerGluPheSerA
 laArgGlnAspGluLeuGlnLysLeuGlnArgGluGlyLeuAspLeuGluArgGlnLeuAlaGluGlyLysLeuLy
 sAspAlaLysLysAlaGlnAlaGluGluLysTrp-93
 100-PheArgLysGlnAlaGlnPheGluGluAspTyrAsnLeuArgArgAsnGluGluPheAla-120
 123-GlnGlnAsnAlaAsnArgVal-129
 133-IleAlaLysGlnGlyTyrAspValIle-142
 150-AsnThrGlnTyrAspValThrAspSerValIleLysGluMetAsnAlaArg-166

Hydrophilic Regions - Hopp-Woods

37-IleTyrLeuGluSerLysGlnAlaArgLysIleGlnLysThrLeuAspSerGluPheSerAlaArgGlnAspG
 luLeuGlnLysLeuGlnArgGluGlyLeuAspLeuGluArgGlnLeuAlaGluGlyLysLeuLysAspAlaLysLy
 sAlaGlnAlaGluGluLysTrp-93
 100-PheArgLysGlnAlaGlnPheGluGluAspTyrAsnLeuArgArgAsnGluGluPheAla-120
 133-IleAlaLysGlnGluGlyTyr-139
 154-AspValThrAspSerValIleLysGluMetAsnAlaArg-166
 a571

AMPHI Regions - AMPHI

6-AlaValAsnValLeu-10
 40-AspGlyAlaArgValPheArgAlaGly-48
 63-AlaAlaValAlaAspPhePheAlaVal-71
 94-ValLysGluValPheLysGlu-99

Antigenic Index - Jameson-Wolf

13-AlaAlaGlyArgGlyThr-18
 35-LysGlnAlaGlnAlaAspGlyAlaArgValPheArgAlaGlyHisArgGluGlnLeuGlyGlyAspVal-
 58
 77-ArgThrGluArgAlaAla-82
 96-ValPheLysGluGlyAspPhe-102

110-ArgAsnAlaAspPheAlaAlaGluHisGlnArgGluGlyPheAlaGlyGluGluProGlyLeuValValGly
 -133
 143-GlyGlnGlyAspPheGlyVal-149
 154-ValAlaAlaArgArgPro-159

Hydrophilic Regions - Hopp-Woods

13-AlaAlaGlyArgGly-17
 35-LysGlnAlaGlnAlaAspGlyAlaArgValPheArgAlaGlyHisArgGluGluGlnLeuGly-55
 77-ArgThrGluArgAlaAla-82
 96-ValPheLysGluGlyAspPhe-102
 110-ArgAsnAlaAspPheAlaAlaGluHisGlnArgGluGlyPheAlaGlyGluGluProGly-129
 154-ValAlaAlaArgArgPro-159
 a572
AMPHI Regions - AMPHI
 6-GlyAlaValGlyLeuProSerAlaLeuAla-15
 61-GlnValLeuProArgAspTyrThrGlyArg-70
 94-AsnThrPheAspSerIle-99
 126-LysGlyLeuGluLeu-130
 154-IleHisSerMetValArg-159
 183-GlyLeuProGluArgIleAspSerGly-191
 200-LeuSerAlaLeuThr-204
 241-ValAlaAlaPheLeu-245
 251-PheThrAspIleAlaLysThrValAlaHisCysLeuSerGlnAspPheSerAspGlyIleGlyAspIleGly
 Gly-275

Antigenic Index - Jameson-Wolf

18-GlnLysGlyLysThr-22
 26-AlaAsnLysGluThrLeu-31
 41-ThrAlaArgAlaAsnGly-46
 51-ProValAspSerGluHis-56
 63-LeuProArgAspTyrThrGlyArgLeuAsnGluHisGly-75
 94-AsnThrPheAspSerIleThrProAspGlnAlaValLysHisProAsnTrpArgMetGlyArgLysIleSerV
 alAspSer-120
 125-AsnLysGlyLeuGluLeu-130
 138-AsnCysProProAspLysLeuGluVal-146
 158-ValArgTyrArgAspGlySerVal-165
 170-GlyAsnProAspMetArgThr-176
 184-LeuProGluArgIleAspSerGlyValGlyAspLeuAspPhe-197
 204-ThrPheGlnLysProAspPheAspArg-212
 263-SerGlnAspPheSerAspGlyIleGlyAspIleGly-274
 279-GlnAspAlaArgThrArgAlaGlnAla-287

Hydrophilic Regions - Hopp-Woods

27-AsnLysGluThrLeu-31
 41-ThrAlaArgAlaAsnGly-46
 52-ValAspSerGluHis-56
 66-AspTyrThrGlyArgLeuAsnGlu-73
 111-ArgMetGlyArgLysIleSerVal-118
 126-LysGlyLeuGluLeu-130
 140-ProProAspLysLeuGlu-145
 158-ValArgTyrArgAspGlySer-164
 170-GlyAsnProAspMetArgThr-176
 184-LeuProGluArgIleAspSerGlyValGlyAspLeuAspPhe-197
 206-GlnLysProAspPheAspArg-212
 265-AspPheSerAspGlyIleGly-271

279-GlnAspAlaArgThrArgAlaGlnAla-287

a574

AMPHI Regions - AMPHI

6-ProAsnSerLeuGluLys-11

47-LeuLysGlnAlaLysSerIleProSerGlyPheTyrLysSerLeuAspAlaLeuValAspArgAsnSerGlyA
rgAlaAlaArgGluLeuAlaGluValValAsp-81
94-GlyLysLeuTyrArgGln-99
110-HisGlnThrLeuLeuAspSerProAspThrThrGly-121
175-GluLysAlaValGluThrAlaArgLeu-183
218-AsnValGlyLysAlaLeuGluAlaAsnLysCys-229
246-PheProAlaAlaValGluAlaTyrAlaAlaGlu-257
266-MetValGlyGluLysLeuTyrGluAlaTyrAla-276
281-ProGluGluGlyLeuAsnArgLeuThrGlyTyrMetGlnThrPheProGluLeuAspLeu-300
332-AsnGlyValTyrArg-336
357-ArgSerValIleGlyArgGlnLeuGlnArgSer-367

Antigenic Index - Jameson-Wolf

1-MetArgProAsnLeuProAsnSerLeuGluLysAlaAspMetAspAsn-16

45-ThrValLeuLysGlnAlaLysSerIleProSerGlyPheTyrLysSerLeuAspAlaLeuValAspArgAsnS
erGlyArgAlaAlaArgGluLeuAlaGluValValAspGlyArgProGlnSerTyrAsp-88

96-LeuTyrArgGlnArgGlyGluAsnAspLysAlaIle-107

113-LeuLeuAspSerProAspThrThrGlyAlaLysArgAlaArgVal-127

135-TyrGlnSerAlaGlyLeuValAspArgAlaGlu-145

151-LeuGlnAspGlyGluMetAlaArgGluAlaArgGln-162

168-TyrGlnGlnAspArgAspTrpGluLysAlaValGluThr-180

182-ArgLeuLeuSerHisAspAspGlnThrTyr-191

210-SerAsnPheAspAlaAlaArg-216

221-LysAlaLeuGluAlaAsnLysLysCysThrArg-231

238-AspIleGluHisArgGlnGlyAsn-245

277-AlaGlnGlyLysProGluGluGlyLeuAsnArgLeuThrGlyTyr-291

312-LysCysGluLysGluAlaAla-318

323-GluLeuValArgArgLysProAspLeuAsnGly-333

341-LysLeuSerAspLeuAspProAlaTrpLysAlaAspAlaAspMetMetArg-357

368-ValMetTyrArgCysArgAsnCysHisPheLys-378

386-CysProAlaCysAsnLysTrpGlnThrPheThrProAsnLysIleGluVal-402

Hydrophilic Regions - Hopp-Woods

1-MetArgProAsnLeu-5

7-AsnSerLeuGluLysAlaAspMetAspAsn-16

45-ThrValLeuLysGlnAlaLysSerIle-53

52-AspAlaLeuValAspArgAsnSerGlyArgAlaAlaArgGluLeuAlaGluValValAspGlyArgProGlnS
er-86

96-LeuTyrArgGlnArgGlyGluAsnAspLysAlaIle-107

115-AspSerProAspThrThrGlyAlaLysArgAlaArgVal-127

140-LeuValAspArgAlaGlu-145

152-GlnAspGlyGluMetAlaArgGluAlaArgGln-162

169-GlnGlnAspArgAspTrpGluLysAlaValGluThr-180

184-LeuSerHisAspAspGlnThrTyr-191

211-AsnPheAspAlaAlaArg-216

221-LysAlaLeuGluAlaAsnLysLysCysThrArg-231

238-AspIleGluHisArgGlnGlyAsn-245

279-GlyLysProGluGluGlyLeuAsn-286

312-LysCysGluLysGluAlaAla-318

323-GluLeuValArgArgLysProAspLeu-331

341-LysLeuSerAspLeuAspPro-347

-517-

349-TrpLysAlaAspAlaAspMetMetArg-357
 368-ValMetTyrArgCysArgAsnCysHis-376
 398-AsnLysIleGluVal-402
a575
AMPHI Regions - AMPHI
 8-PheArgLysProAlaSer-13
 20-PheAlaGluAlaVal-24
 42-SerThrValSerGlyLeuPheSerAla-50
 114-LeuSerLysSerLysSer-119
 139-SerSerAspSerPro-143
 150-PheThrSerPheGly-155
 163-ValSerThrSerAlaLysValIleSerMetPro-173
 217-SerLysValTyrGluProProAsn-224
 233-AlaGluThrCysSerThr-238
 283-AlaGlyPheSerAlaPheAlaSerGlyAla-292
 294-ThrPheAlaSerGlyPheSerThrGly-302
 304-SerThrValAlaCys-308
 311-GlySerAspGlyMetAspAlaValSerAlaLeu-321

Antigenic Index - Jameson-Wolf
 2-ValSerGlyGluGluAlaPheArgLysProAlaSerProGluGlyGluAlaGlyPhe-20
 34-GlyArgLeuSerGluLysSerValSer-42
 54-ThrAspSerGlySerGlyVal-60
 96-SerSerSerCysValSerAlaProAspLysMetProPhe-108
 113-ArgLeuSerLysSerLysSerMetArgLeuGluGly-124
 134-PheAlaAspAsnSerSerSerAspSerProSerLysAlaSerVal-148
 155-GlyAlaGlySerGly-159
 173-ProSerSerAlaAlaSerArgSerGlySerSerSerGlyThrAspSerSerValArgArgAlaArgLeu
 AspTrpAlaArgArgLysSerSerSerArgAlaIle-208
 211-AlaProProProAlaSer-216
 218-LysValTyrGluProProAsnSerProLeu-227
 230-SerSerSerAlaGluThrCysSerThrGlySerGluThr-242
 261-GlyAlaAspSerAlaAlaVal-267
 276-GlyThrGlySerGlyArgThrAla-283
 299-PheSerThrGlyPhe-303
 309-LeuAspGlySerAspGlyMetAsp-316

Hydrophilic Regions - Hopp-Woods
 2-ValSerGlyGluGluAlaPheArgLysProAlaSerProGluGlyGluAlaGlyPhe-20
 34-GlyArgLeuSerGluLysSerValSer-42
 101-SerAlaProAspLysMetPro-107
 113-ArgLeuSerLysSerLysSerMetArgLeuGluGly-124
 137-AsnSerSerSerAspSerProSerLysAla-146
 176-AlaAlaSerSerArgSerGlySerSerGlyThrAspSerSerValArgArgAlaArgLeuAspTrpAla
 ArgArgLysSerSerSerArgAlaIle-208
 231-SerSerAlaGluThrCysSerThrGlySerGluThr-242
 310-AspGlySerAspGlyMetAsp-316
a576-1
AMPHI Regions - AMPHI
 31-AlaSerGluProAlaAlaAla-37
 46-SerIleGlySerThr-50
 63-GlyArgSerLeuLysGlnMetLys-70
 82-ThrGluAlaMetGln-86
 102-GlnGluValMetMetLysPheLeuGlnGlnGlnAlaLysAlaValGluLysHis-120
 140-AlaLysAspGlyValLysThrThr-147

202-IleLeuGlyTrpThrGluGlyVal-209

Antigenic Index - Jameson-Wolf

20-AlaCysGlyLysGluAlaAlaPro-28
 30-SerAlaSerGluProAlaAla-36
 38-SerSerAlaGlnGlyAspThrSerSerIleGly-48
 61-AspIleGlyArgSerLeuLysGlnMetGlnGlyAlaGluIleAspLeu-78
 89-TyrAspGlyLysGluIleLysMetThrGluGluGlnAlaGln-102
 109-LeuGlnGluGlnGlnAlaLysAlaValGluLysHisLysAlaAspAlaLysAlaAsnLysGluLysGlyGlu
 AlaPheLeuLysGluAsnAlaLysAspGlyValLysThrThrAlaSerGlyLeu-151
 154-LysIleThrLysGlnGlyGluGlyLysGlnProThrLysAspAspIleVal-170
 173-GluItyrGluGlyArgLeuIleAsp-180
 183-valPheAspSerSerLysAlaAsnGlyGly-192
 210-GlnLeuLeuLysGluGlyGlyGlu-217
 224-SerAsnLeuAlaTyrArgGluGlnGlyAlaGlyAspLysIleGlyProAsnAla-241
 253-GlyAlaProGluAsnAlaProAlaLysGlnProAla-264
 266-ValAspIleLysLysValAsn-272

Hydrophilic Regions - Hopp-Woods

21-CysGlyLysGluAlaAlaPro-28
 30-SerAlaSerGluProAlaAla-36
 40-AlaGlnGlyAspThrSerSer-46
 61-AspIleGlyArgSerLeuLysGlnMetLysGluGlnGlyAlaGluIleAspLeu-78
 89-TyrAspGlyLysGluIleLysMetThrGluGlnAlaGln-102
 112-GlnGlnAlaLysAlaValGluLysHisLysAlaAspAlaLysAlaAsnLysGluLysGlyGluAlaPheLeu
 LysGluAsnAlaAlaLysAspGlyValLysThrThrAla-148
 155-IleThrLysGlnGlyGluGlyLysGlnProThrLysAspAspIleVal-170
 173-GluItyrGluGlyArgLeuIleAsp-180
 185-AspSerSerLysAlaAsnGly-191
 210-GlnLeuLeuLysGluGlyGlyGlu-217
 227-AlaTyrArgGluGlnGlyAlaGlyAspLysIleGlyPro-239
 253-GlyAlaProGluAsnAlaProAlaLysGlnProAla-264
 266-ValAspIleLysLysValAsn-272

a577**AMPHI Regions - AMPHI**

8-GlyLysIleValGlyAsn-13
 24-AlaAlaSerTyrProLysProCysLysSerPheLysLeuAla-37
 62-ThrValIleLysIleIle-67
 104-AlaPheValValGlyIle-109
 112-GlyMetPheAlaLeuPheGlyArg-119
 144-GluLeuThrAlaProProAlaGln-151

Antigenic Index - Jameson-Wolf

1-MetGluArgAsnGlyVal-6
 14-ArgIleLeuArgMetSerSerGluHisAla-23
 26-SerTyrProLysProCysLysSerPheLys-35
 44-ArgSerCysProGlyGly-49
 88-LeuProGlyGlnLysPheAspLeu-95
 121-LeuSerLeuArgGlyGluAsnGlyArgLeuArgAlaGluValLysLysAsnAlaArgLeuThrGlyLysGlu
 LeuThrAlaProProAlaGlnAsnAlaProGluSerAlaLysGlnPro-160

Hydrophilic Regions - Hopp-Woods

1-MetGluArgAsnGlyVal-6
 14-ArgIleLeuArgMetSerSerGluHisAla-23

-519-

29-LysProCysLysSerPheLys-35
 121-LeuSerLeuArgGlyGluAsnGlyArgLeuArgAlaGluValLysLysAsnAlaArgLeuThrGlyLysGlu
 LeuThr-146
 152-AsnAlaProGluSerAlaLysGlnPro-160

a578

AMPHI Regions - AMPHI

10-PheAlaAspPhePheLysAspPheAlaProGlnPheGlyGlyPheGlnAsn-26
 34-AspPhePheAlaAlaPheLeuGlyGlyLeuGlu-44
 71-AsnThrAspAlaAlaArgPhe-77

Antigenic Index - Jameson-Wolf

2-GlyLysLeuAspIle-6
 13-PhePheLysAspPheAlaProGlnPheGlyGly-23
 43-LeuGluGlyAspValGlyAsnThrAla-51
 71-AsnThrAspAlaAlaArgPheAla-78
 88-HisAsnGlnAsnIleGlnThrArgAsnAspPheArgLeuGluArgGlyGlyValGly-106

Hydrophilic Regions - Hopp-Woods

2-GlyLysLeuAspIle-6
 43-LeuGluGlyAspValGlyAsn-49
 73-AspAlaAlaArgPheAla-78
 92-IleGlnThrArgAsnAspPheArgLeuGluArgGlyGlyVal-105
a579
AMPHI Regions - AMPHI
 6-PheAspPheLeuHisLeuIleSerAlaSerGlyTrpGluHisLeuAlaGlu-22
 49-ValAlaValMetArg-53
 66-IleSerPheLeuCysAsn-71
 115-LeuSerAsnPheAla-119
 129-ProPheLysValGlyAspPheIleArgValGlyGlyPheGluGlyTyrValArgGluIleLys-149
 258-GlnValValGluAsnLeuArg-264

Antigenic Index - Jameson-Wolf

110-SerLeuLysAspGlnLeuSer-116
 128-ArgProPheLysVal-132
 136-IleArgValGlyGlyPheGluGlyTyrValArgGluIleLysMet-150
 154-SerLeuArgThrThrAspAsnGluGluValValLeu-165
 175-IleValAsnArgSerThrLeu-181
 198-LeuLysValAlaLysGluAlaValLeu-206
 216-ValGlnAsnGluGluArgGlnAla-223
 231-GlyAspAsnAlaIle-235
 244-AsnGluAlaAspArgTrpThrLeu-251
 253-CysAspLeuAsnGluGlnValValGluAsnLeuArgLysValAsn-267
 271-ProPheProGlnArgAspIleHis-278

Hydrophilic Regions - Hopp-Woods

110-SerLeuLysAspGlnLeu-115
 144-TyrValArgGluIleLysMet-150
 155-LeuArgThrThrAspAsnGluGluValVal-164
 198-LeuLysValAlaLysGluAlaValLeu-206
 216-ValGlnAsnGluGluArgGlnAla-223
 244-AsnGluAlaAspArgTrp-249
 254-AspLeuAsnGluGlnValValGluAsnLeuArgLysValAsn-267
 273-ProGlnArgAspIleHis-278
a580

AMPHI Regions - AMPHI

47-ProValSerAlaSerLys-52
 54-SerLeuValLysProLeuSerGlnProLeuAla-64

Antigenic Index - Jameson-Wolf
 1-MetAspSerProLysValGlyCysGly-9
 48-ValSerAlaSerLys-52
 66-AlaArgProGluAlaAlaHis-72
 81-ArgProGluAlaLeuAlaAspAsnSerValSerProThrHisAlaThrSerGlyGluVal-100

Hydrophilic Regions - Hopp-Woods

1-MetAspSerProLysVal-6
 66-AlaArgProGluAlaAlaHis-72
 81-ArgProGluAlaLeuAla-86
 96-ThrSerGlyGluVal-100
a581
AMPHI Regions - AMPHI
 43-SerHisPheIleSerLeu-48
 56-ArgGluCysPheValGlyPhe-62
 76-AlaThrAlaPheGlyArgIleAsnGln-84
 91-ValHisGlyPheLeuThrThrPheAla-99

Antigenic Index - Jameson-Wolf
 8-GlyGlnThrGlyIleGluGlnAsnThrPheCysArgArgGlyPheThrArgIleAspMetGlyGlyAsnThrAspVal-33
 35-ValGlnAlaAspArgGlyLeuThrSer-43
 49-SerLysLeuGluThrGluValArgGluCysPhe-59
 98-PheAlaGlyArgIleAsnProAlaHisCysGlnSerGlnThrAla-112

Hydrophilic Regions - Hcpp-Woods

35-ValGlnAlaAspArgGlyLeu-41
 49-SerLysLeuGluThrGluValArgGlu-57
a582
AMPHI Regions - AMPHI
 27-ThrAspAsnValThrArgLeuAla-34
 65-ValArgSerSerLeu-69
 91-GlyGluThrAlaAspIleTyrThrProLeuSer-101
 139-GlySerProThrArg-143
 169-IleAlaGluAspLeuPhe-174
 246-SerArgSerTrpAsnArgIleTyrAlaMet-255
 263-LeuThrValIleProArgValTrpValArgAlaPheAspGlnSer-277
 286-IleAlaAspTyrMetGlyTyr-292
 334-LeuLysGlyValValArgGlyPheHisGlyTyrGlyGlu-346

Antigenic Index - Jameson-Wolf

26-LeuThrAspAsnValThr-31
 34-AlaCysTyrAspArg-38
 44-LeuProSerSerAlaGlyGlnGluGlyGlnGluSerLysAla-57
 63-GluThrValArgSerSerLeuAspLysGlyGluAla-74
 77-ValValGluLysGlyGlyAspAlaLeuProAlaAspSerAlaGlyGluThrAlaAsp-95
 105-AspLeuAspLysAsnAspLeuArgGly-113
 115-LeuGlyValArgGluHisAsnProMetTyr-124
 131-AsnAsnSerProAsnTyrAlaProGlySerProThrArgGlyThrThrValGlnGluLysPheGlyGlnGlnLysArgAlaGluThrLysLeu-161
 165-PheLysSerLysIleAlaGluAspLeuPheLysThrArgAla-178

-521-

183-GlyTyrThrGlnArgSerAspTrpGlnIleTyrAsnGlnGlyArgLysSerAlaProPheArgAsnThrAsp
TyrLysPro-209
216-ProValLysAlaAspLeuProPheGlyGlyArgLeuArgMet-229
237-GlnSerAsnGlyGlnSerArgProGluSerArgSerTrpAsn-250
273-AlaPheAspGlnSerGlyAspLysAsnAspAsnProAspIleAlaAsp-288
291-GlyTyrGlyAspValLysLeuGlnTyrArgLeuAsnAspArgGlnAsnVal-307
312-ArgTyrAsnProLysThrGlyTyr-319
330-IleLysGlyLysLeuLysGlyValVal-338
342-HisGlyTyrGlyGluSerLeuIleAspTyrAsnHisLysGlnAsnGly-357
365-AsnAspLeuAspGlyIle-370

Hydrophilic Regions - Hopp-Woods

48-AlaGlyGlnGluGlyGlnGluSerLysAla-57
63-GluThrValArgSerSerLeuAspLysGlyGluAla-74
79-GluLysGlyGlyAspAlaLeuPro-86
88-AspSerAlaGlyGluThrAlaAsp-95
105-AspLeuAspLysAsnAspLeuArgGly-113
115-LeuGlyValArgGluHisAsn-121
140-SerProThrArgGlyThrThrValGlnGluLysPheGlyGlnGlnLysArgAlaGluThrLysLeu-161
165-PheLysSerLysIleAlaGluAspLeuPheLysThrArgAla-178
195-GlnGlyArgLysSerAlaProPheArgAsnThrAspTyrLysPro-209
225-GlyArgLeuArgMet-229
239-AsnGlyGlnSerArgProGluSerArgSerTrp-249
274-PheAspGlnSerGlyAspLysAsnAspAsnProAspIleAlaAsp-288
293-GlyAspValLysLeu-297
299-TyrArgLeuAsnAspArgGlnAsn-306
332-GlyLysLeuLysGlyValVal-338
352-AsnHisLysGlnAsn-356
a583

AMPHI Regions - AMPHI

11-HisLeuAlaPheCysAlaPheCysGlyIle-20
28-ArgLeuHisAsnArgMetTyrAsnAlaAlaAlaArg-40
58-ValThrAspAlaGln-62
66-SerLysAsnGlyAspLysGlnIle-73
75-AspThrHisProGlnPro-80
117-GlyTyrAlaGlyTyrCysAspGln-124
140-AspAsnGlyGlyAsnHisThrAsp-147
162-GlyTyrGlyGlnCysGlnAsnGlnGlyAla-171

Antigenic Index - Jameson-Wolf

24-ThrAlaGlyAsnArgLeuHisAsnArgMetTyr-34
41-GlyIleGlyArgGlyAsnGlySerGlnGlnGlnPheGlyLysSerGluThrValThrAspAlaGlnArgPheS
erSerLysAsnGlyAspLysGlnIleSerAspThrHisProGlnProCysPheCeuGlnThrAlaArgAsnHisAs
nCysAspGlyAsnGlnProAsnGlnArgIleGlyGluArgThrGlnArgIleAlaHisArgArgThrArgPheVal
GlyGlyTyrAlaGlyTyrCysAspGlnProAspGlyAsnAsnArgGlnArgThrGlnArgHisGlyLeuAlaAspA
snGlyGlyAsnHisThrAspLysHisGlyGlnGlnArgProSerLeuArgLeuAspProValGlyTyrGlyGlnCy
sGlnAsnGlnGlyAlaGlnTyrCysGlyAsnGlyGluGlyTyrArgPhe-182
190-AspLeuArgLysAspArgProGluLysSerGluLys-202

Hydrophilic Regions - Hopp-Woods

27-AsnArgLeuHisAsn-31
41-GlyIleGlyArgGlyAsnGlySer-48
51-GlnPheGlyLysSerGluThrValThrAspAlaGlnArgPheSerSerLysAsnGlyAspLysGlnIleSerA
spThrHisPro-78

-522-

84-GlnThrAlaArgAsnHisAsnCysAspGlyAsnGlnProAsnGlnArgIleGlyGluArgThrGlnArgIleAlaHisArgArgThrArgPhe-114
 123-AspGlnProAspGlyAsnAsnArgGlnArgThrGlnArg-135
 137-GlyLeuAlaAspAsnGlyGlyAsnHisThrAspLysHisGlyGlnGlnArgProSerLeuArgLeuAspPro-160
 178-GluGlyTyrArgPhe-182
 190-AspLeuArgLysLysAspArgProGluLysSerGluLys-202
a584-2

AMPHI Regions - AMPHI

28-GluPheSerGluSerAlaGlyValGluAlaValGlnAspThrMet-42
 60-AlaGluPheValLysLysPheAsnAsnPheThrArgLys-72
 116-PheAspAlaLeuAsnArgPheIleAlaAspVal-126
 148-IleAspGlnValSerLysAsp-154
 166-LeuAlaClyValLeuGly-171
 186-GlySerHisIleAla-190
 196-GlnAlaLysMetLeuArgAlaMet-203

Antigenic Index - Jameson-Wolf

50-AlaGluGlyArgAspLysAsnAlaVal-58
 61-GluPheValLysLysPheAsnAsnPheThrArgLysSerLysAsnGlySerPheLysThrGluLeuValSerA
 rgSerAlaMetProArgTyrGlnTyrThrAsnGlyArgArgIleGlnThrGlyTrpGluGluArgAlaGluPheLy
 sValGluGlyArgAsnPheAspAla-118
 138-HisValSerArgGluArgArgAsnGluValIleAspGlnValSerLysAspAlaValLeu-157
 159-PheLysAlaArgAlaGluLysLeuAla-167
 189-IleAlaClyGly-193
 210-AsnMetGluGlyAlaAspSerAlaAlaProGlyValGluGluIleSer-225

Hydrophilic Regions - Hopp-Woods

50-AlaGluGlyArgAspLysAsnAlaVal-58
 67-AsnAsnPheThrArgLysSerLysAsnGlySerPheLysThrGluLeuValSer-84
 95-AsnGlyArgArgIleGlnThrGlyTrpGluGluArgAlaGluPheLysValGluGlyArgAsnPheAspAla-
 118
 138-HisValSerArgGluArgArgAsnGluValIleAspGlnValSerLysAspAlaValLeu-157
 159-PheLysAlaArgAlaGluLysLeuAla-167
 210-AsnMetGluGlyAlaAspSerAlaAlaProGlyValGluGluIleSer-225
a585

AMPHI Regions - AMPHI

6-ArgIlePheAlaThrPheCysAlaValIleValCys-17
 46-ThrThrLeuMetGlySerIleIleSer-54
 65-ArgGluIleLeuThrGluTrpLysAsp-73
 93-HisArgTyrIleAspSer-98
 133-LysAspTrpAspLysLeuGlnAlaArgArg-142
 153-ProLeuAlaProIleTrp-158
 178-LeuAlaGlyAsnIleAlaLysProIleArgIleLeuGlyAsnGlyMetAspArgValAla-197
 223-pheAspLysMetValGluLysLeuGluLysLeuVal-234
 247-GluMetArgSerPro-251
 255-MetGlnAlaIleValGlyLeuIle-262
 273-LeuLysArgLeuGluGly-278
 353-LeuTyrArgAlaPheAspAsnValIleArgAsnAlaValAsn-366
 430-IleIleGluGlnHisCysGlyLysIleIleAlaGlu-441

Antigenic Index - Jameson-Wolf

36-AsnGlnPheAsnGlnArgArgThrIleGlu-45
 56-PheArgAlaArgGlyAspAlaGlyAlaArgGluIleLeuThrGluTrpLysAspSerProValSer-77
 84-GlnGlyAspGluLysLysAspIleLeu-92

-523-

97-AspSerTyrThrIleGluArgAlaArgLeu-106
 120-GluTyrAspArgPheGlyGlu-126
 133-LysAspTrpAspLysLeuGlnAlaArgArgLeuProSerPro-146
 189-LeuGlyAsnGlyMetAspArgValAlaAsnGlyGluLeuGluThrArgIle-205
 207-GlnGlnValAspAspArgAspAspGluLeuSer-217
 225-LysMetValGluLysLeuGluLysLeuValAlaLysGluArgHisLeu-240
 246-HisGluMetArgSerProLeuIle-253
 264-AlaGlnProGlnLysGlnGlnTyrLeuLysArgLeuGluGlyGluLeuThrArgMetAspThrLeuAla-287
 294-SerArgLeuGluThrSerAsnMetAlaLeuGluLysGluSerLeuLys-309
 317-LeuValGluAspAsnGlnSerIleAlaGlnLysAsnGlyGln-330
 335-SerAlaAspGlyLysIleProGluAsnThr-344
 367-TyrSerProGluGlySerThr-373
 377-AsnIleGlyGlnAspHisLysHis-384
 388-AspValThrAspAsnGlyProGlyValAspGluMetGln-400
 409-TyrArgAlaAspSerSerAlaAsnLysProGlyThrGly-421
 432-GluGlnHisCysGlyLysIleIleAlaGluAsnIleLysProAsnGlyLeuArg-449
 453-IleLeuProLysLysLysThrGlySerLysThrGluLysSerAlaAsn-468

Hydrophilic Regions - Hopp-Woods

37-GlnPheAsnGlnArgArgGlyThrIleGlu-45
 56-PheArgAlaArgGlyAspAlaGlyAlaArgGluIleLeuThrGluTrpLysAspSerProVal-76
 84-GlnGlyAspGluLysLysAspIleLeu-92
 100-ThrIleGluArgAlaArgLeu-106
 120-GluTyrAspArgPheGlyGlu-126
 133-LysAspTrpAspLysLeuGlnAlaArgArgLeuPro-144
 192-GlyMetAspArgValAlaAsnGlyGluLeuGluThrArgIle-205
 207-GlnGlnValAspAspArgAspAspGluLeuSer-217
 225-LysMetValGluLysLeuGluLysLeuValAlaLysGluArgHisLeu-240
 246-HisGluMetArgSerProLeu-252
 265-GlnProGlnLysGlnGlnTyrLeuLysArgLeuGluGlyGluLeuThrArgMetAspThrLeuAla-287
 294-SerArgLeuGluThr-298
 302-AlaLeuGluLysGluSerLeuLys-309
 317-LeuValGluAspAsnGlnSerIleAlaGlnLysAsnGlyGln-330
 335-AlaAspGlyLysIleProGlu-342
 389-ValThrAspAsnGlyProGlyValAspGluMetGln-400
 410-ArgAlaAspSerSerAlaAsnLysProGlyThr-420
 438-IleIleAlaGluAsnIleLys-444
 454-LeuProLysLysLysThrGlySerLysThrGluLysSerAlaAsn-468
a586
AMPHI Regions - AMPHI
 12-AspAsnPheLysTyrPheTrpLysThr-20
 30-IleLeuAlaAlaLeuGly-35
 56-ValLeuAlaAsnIleValGluLysAlaGlnAsnLysAlaPro-69
 80-LeuGlnGlnSerTyrProHisSerIleSer-89
 177-SerGlnGluAlaLeuLysAsnTyrGlyGlnAlaLeuGluLysMetProGlnAspSerValGlyArg-198

Antigenic Index - Jameson-Wolf

4-HisLeuGluGlnGlnGluLeuAspAsn-13
 43-GlnAsnArgAlaAlaSerGlnAsnGlnGluAla-53
 60-IleValGluLysAlaGlnAsnLysAlaProGlnSerGluIleAsnAlaGluLeuAlaLysLeuGlnGln-82
 100-ThrGluPheAspAlaGlnArgTyrProValAlaGluGly-112
 118-LeuSerAsnGlnLysAspSerLeu-125
 140-GlnGlnLysLysTyrAspAla-146

153-ThrProValGluAlaAspPhe-159
 164-MetGluThrLysGlyAspVal-170
 173-AlaGlnGlyLysSerGlnGluAlaLeuLysAsnTyrGlyGlnAlaLeuGluLysMetProGlnAspSerVal
 GlyArgGluLeuVal-201
 204-LysLeuAspSerLeuLys-209

Hydrophilic Regions - Hopp-Woods

4-HisLeuGluGlnGlnGluLeuAspAsn-13
 45-ArgAlaAlaSerGlnAsnGlnGluAla-53
 60-IleValGluLysAlaGlnAsnLysAlaProGlnSerGluIleAsnAlaGluLeuAlaLys-79
 100-ThrGluPheAspAlaGlnArgTyrAspValAlaGluGly-112
 120-AsnGlnLysAspSerLeu-125
 140-GlnGlnLysLysTyrAspAla-146
 153-ThrProValGluAlaAspPhe-159
 164-MetGluThrLysGlyAspVal-170
 174-GlnGlyLysSerGlnGluAlaLeuLys-182
 187-AlaLeuGluLysMetProGlnAspSerValGlyArgGluLeuVal-201
 204-LysLeuAspSerLeuLys-209
a587
AMPHI Regions - AMPHI
 6-LeuProAlaLeuProAlaIleLeuProLeuSerAla-17
 232-LysGlnProAspArgLeuAspGlyLysGluSerAlaArgAsnThrSerThr-238

Antigenic Index - Jameson-Wolf

27-AspIleMetThrAspLysGlyLysTrpLysLeuGluThr-39
 44-LeuAsnSerGluAsnAsnArgAlaGluLeu-53
 71-ThrGluIleGlnGluAsnGlySerAsnThr-80
 95-GlyAsnThrAspIleTyrGlySerGlySer-104
 108-HisGluGluArgLysLeuAspGlyAsnGlyLysThrArgAsnLysArgMetSerAsp-126
 135-PheLeuLysAspAspLysAsnProAla-143
 151-ThrValTyrGluLysSerArgAsnLysAlaSerSerGlyLysSer-165
 187-TyrArgIleAsnGlySerLysThrLeuSerSerAsnThrLysTyrLysAlaGly-204
 217-AlaAsnAspArgIleSerLeuThrGlyGly-226
 231-GlyLysGlnProAspArgLeuAspGlyLysGluSerAlaArgAsnThrSerThr-249
 273-ValSerGlyGlnSerSerGlyLeuLysPhe-283

Hydrophilic Regions - Hopp-Woods

27-AspIleMetThrAspLysGlyLysTrpLysLeu-37
 47-GluAsnAsnArgAlaGluLeu-53
 72-GluIleGlnGluAsnGlySerAsn-79
 108-HisGluGluArgLysLeuAspGlyAsnGlyLysThrArgAsnLysArgMetSerAsp-126
 135-PheLeuLysAspAspLysAsnPro-142
 151-ThrValTyrGluLysSerArgAsnLysAlaSerSerGly-163
 193-LysThrLeuSerSer-197
 199-ThrLysTyrLysAla-203
 217-AlaAsnAspArgIleSer-222
 232-LysGlnProAspArgLeuAspGlyLysGluSerAlaArgAsn-246
 277-SerSerSerGlyLeuLysPhe-283
a588
AMPHI Regions - AMPHI
 52-GlnAspGlyArgAsnTyrThrGlySerPhe-61
 99-GlyThrPheLysLys-103

Antigenic Index - Jameson-Wolf

25-SerTyrGlnGluProGlyCysThrTyrGluGlyAspValGlyLysAspGlyLysProAlaGlyLysGlyThrTyrArgCysGlnAspGlyArgAsnTyrThrGlySerPheLysAsnGlyLysPheAspGlyGlnGly-70
 80-IlePheIleGluProPheAsnSerAspSerThrLysPheArg-93
 100-ThrPheLysLysGlyLeuAlaHisGlyArgPheThrValSerGlnAsnGlyGluThr-118
 124-CysGluAsnGlyMetIleLysGluValLysLeuProLysAsnLys-138

Hydrophilic Regions - Hopp-Woods

33-TyrGluGlyAspValGlyLysAspGlyLysProAlaGly-45
 47-GlyThrTrpArgCysGlnAspGlyArgAsnTyr-57
 61-PheLysAsnGlyLysPheAspGly-68
 85-PheAsnSerAspSerThrLysPheArg-93
 100-ThrPheLysLysGlyLeuAla-106
 124-CysGluAsnGlyMetIleLysGluValLysLeuProLysAsnLys-138
a589

AMPHI Regions - AMPHI

18-AlaSerArgIleGluLysValLeu-25
 54-ValAlaAspIleAlaLysIleIleGluLys-63
 103-MetValGlyMetMet-107
 128-LeuAlaSerValValGlnLeuTrp-135
 155-MetAspValLeuValThrIle-161
 198-PheValSerLeuGlyLysPheLeuGluHisArg-208
 230-ValGlnArgAspGlyGlu-235
 245-GlnIleGlyAspLeuIleArg-251
 315-LeuGlyAspMetMetAsnAlaLeuSerGluAlaGln-326
 330-AlaProIleAlaArgValAlaAspLys-338
 349-GlyIleAlaLeuLeuThrPheIleAlaThr-358
 396-MetGlyLysAlaVal-400
 471-IleValSerAlaAlaGln-476
 482-IleProThrAlaGln-486
 502-GlyAlaGlyLeuValLys-507
 539-LysProIleGlyAlaPheAlaLeuAlaAspAlaLeuLys-551
 553-AspThrAlaGluAlaIleGlyArgLeu-561
 603-GluValGlnLysLeuLysAlaAla-610
 617-ValGlyAspGlyIleAsnAspAlaPro-625
 640-AlaAspValAlaGluHisThr-646
 653-GlnHisSerValAsnGlnLeuAlaAspAlaLeuSer-664
 680-AlaPhePheTyrAsnIleLeu-686

Antigenic Index - Jameson-Wolf

1-MetGlnGlnLysValArgPheGlnIleGluGlyMetThr-13
 17-CysAlaSerArgIleGluLysValLeuAsnLysLysAspPheValGluSer-33
 39-AlaSerGluGluAlaGlnValValPheAspAspSerLysThrSerVal-54
 59-LysIleIleGluLysThrGlyTyrGlyAlaLysGluLysThrGluAspThrLeuProGlnProGluAlaGluHis-83
 114-ThrArgHisAspTrp-118
 148-IleLysGlyGlyLeu-152
 205-LeuGluHisArgThrIlysLysSerSerLeuAsn-215
 228-ValAsnValGlnArgAspGlyGluTrpArg-237
 253-AsnHisGlyGluArgIleAlaAla-260
 262-GlyIleIleGluSerGlySerGlyTrpAlaAspGluSerHisLeuThrGlyGluSerAsnProGluGluLysLysAlaGlyGly-289
 298-ThrGluGlySerVal-302
 323-SerGluAlaGlnGlySerLysAlaProIle-332
 334-ArgValAlaAspLysAlaAla-340
 361-IleLysGlyAspTrp-365

396-MetGlyLysAlaValLys-401
 409-AlaAlaAlaMetGluGluAlaAlaHis-417
 422-ValLeuAspLysThrGlyThrLeuThrGluGlyLysProGlnVal-436
 443-ProAspSerGlyPheAspGluAspAlaLeu-452
 459-ValGluGlnAsnAla-463
 498-AlaGluValLysGlyAlaGlyLeu-505
 507-LysAlaGlyLysAlaGluPheAla-514
 520-LysPheSerAspGlyVal-525
 535-SerValAsnGlyLysProIle-541
 548-AspAlaLeuLysAlaAspThrAlaGluAlaIleGlyArgLeuLysLysHisAsnIle-566
 572-SerGlyAspAsnGlyThrValGluTyrValAla-583
 593-GlyAsnMetSerProArgAspLysAlaAlaGluValGlnLysLeuLysAlaAlaGly-611
 617-ValGlyAspGlyIleAsnAspAla-624
 636-MettlysGlyAlaAspValAlaGlu-644
 658-AlaThrLeuLysAsnIleLys-674
 715-AsnAlaLeuArgLeuLysArgValLysIleAsp-725

Hydrophilic Regions - Hopp-Woods

1-MetGlnGlnLysValArgPheGlnIle-9
 19-SerArgIleGluLysValLeuAsnLysLysAspPheValGlu-32
 39-AlaSerGluGluAlaGlnValValPheAspAspSerLysThrSerVal-54
 64-ThrGlyTyrGlyAlaLysGluLysThrGluAspThrLeuProGlnProGluAlaGluHis-83
 205-LeuGluHisArgThrLysLysSerSerLeu-214
 229-AsnValGlnArgAspGlyGluTrpArg-237
 253-AsnHisGlyBrgArgIleAlaAla-260
 262-GlyIleIleGluSer-266
 270-TrpAlaAspGluSerHisLeuThrGlyGluSerAsnProGluGluLysLysAlaGlyGly-289
 323-SerGluAlaGlnGlySerLysAlaProIle-332
 334-ArgValAlaAspLysAlaAla-340
 409-AlaAlaAlaMetGluGluAlaAlaHis-417
 422-ValLeuAspLysThrGlyThr-428
 430-ThrGluGlyLysProGln-435
 445-SerGlyPheAspGluAspAlaLeu-452
 459-ValGluGlnAsnAla-463
 498-AlaGluValLysGly-502
 507-LysAlaGlyLysAlaGluPheAla-514
 548-AspAlaLeuLysAlaAspThrAlaGluAlaIleGlyArgLeuLysLysHisAsnIle-566
 573-GlyAspAsnGlnGly-577
 596-SerProArgAspLysAlaAlaGluValGlnLysLeuLysAlaAlaGly-611
 638-GlyIleAlaAspValAlaGlu-644
 658-AlaThrLeuLysAsnIleLys-674
 717-LeuArgLeuLysArgValLysIleAsp-725
 a590

AMPHI Regions - AMPHI

77-TyrLeuProAspAsnLeuLysThrValLeuGluGlnProValThrLeuValAsnHisIleThrHis-98
 100-ProPheAlaGlyGlyPhe-105
 123-LysValLeuGluArgPhePhe-129
 132-GlnValProValSerLeu-137
 177-TyrGlnLysGlyPheLysSerTyrArgAsnGly-187
 214-ThrSerAspGlyIleAsnProLeu-221
 248-AsnGluLeuValAsnLeuVal-254
 331-LysArgLysPheAlaArgIle-337
 420-LysMetLeuGluAsp-424
 450-AspIleAsnGluThrLeuArgLeuMet-458
 460-AspSerThrValGln-464

Antigenic Index - Jameson-Wolf

1-MetLysLysProLeu-5
 26-LysAlaGluGluSerLeuThrGlnGlnLysIleLeuGln-39
 48-SerHisGlnTyrGluArgGlyTrpPheThrSerThrGluThrThrValIleArgLeuLysProGluLeu-70
 75-GlnLysTyrLeuProAspAsnLeuLysThrValLeu-86
 113-ThrGluPheLysTyrAlaProGluThrGluLysValLeuGlu-126
 128-PhePheGlyLysGlnVal-133
 144-AsnGlySerGlyLysMetGluVal-151
 157-AspTyrGluGluLeuSerGly-163
 175-ThrValIleGlnLysGlyPheLysSerTyrArgAsnGlyTyrAspAlaPro-191
 196-LysLeuAlaAspLysGlyAspAlaAlaPheGlu-206
 208-ValHisPheAspSerGluThrSerAspGlyIleAsn-219
 233-PheSerLeuGluTrpLysGluGlyValAspTyr-243
 264-AsnProAsnGlySerIleAlaProSerLysIleGluValGly-277
 281-PheSerThrLysThrGluSerGlyAla-290
 292-IleAspSerGluGlyGlnPheArgPhe-300
 305-TyrGlyAspGluLysTyrGlyPro-312
 330-LeuLysArgLysPheAlaArgIleSerAlaLysLysMetThrGluGluGlnIleArgAsnAspLeu-351
 355-ValLysGlyGluIlaSerGly-361
 366-AsnProValLeuAsp-370
 378-LeuProSerGlyLysIleAspValGlyGly-387
 389-IleMetPheLysAspMetLysLysGluAspLeuAsnGln-401
 406-LeuLysLysThrGluAlaAspIleArgMet-415
 437-AsnAlaGluAspGluAlaGluGlyArgAlaSerLeuAspAspIleAsnGluThrLeu-455
 466-MetAlaArgGluLysTyr-471
 475-AsnGlyAspGlnIleAsp-480
 485-LeuLysAsnAsnGlnLeuLysLeuAsnGlyLysThrLeuGlnAsnGluProGluProAspPheAspGluGly
 GlyMetValSerGluProGlnGln-516

Hydrophilic Regions - Hopp-Woods

1-MetLysLysProLeu-5
 26-LysAlaGluGluSerLeuThrGln-33
 62-ThrValIleArgLeuLysProGluLeu-70
 77-TyrLeuProAspAsnLeuLysThrValLeu-86
 113-ThrGluPheLysTyrAlaProGluThrGluLysValLeuGlu-126
 147-GlyLysMetGluVal-151
 157-AspTyrGluGluLeuSerGly-163
 180-GlyPheLysSerTyrArgAsnGlyTyr-188
 196-LysLeuAlaAspLysGlyAspAlaAlaPheGlu-206
 208-ValHisPheAspSerGluThrSerAspGly-217
 233-PheSerLeuGluTrpLysGluGlyValAspTyr-243
 272-SerLysIleGluValGly-277
 292-IleAspSerGluGlyGlnPhe-298
 306-GlyAspGluLysTyrGlyPro-312
 330-LeuLysArgLysPheAlaArgIleSerAlaLysLysMetThrGluGluGlnIleArgAsnAspLeu-351
 355-ValLysGlyGluIla-359
 381-GlyLysIleAspValGlyGly-387
 389-IleMetPheLysAspMetLysLysGluAspLeuAsn-400
 406-LeuLysLysThrGluAlaAspIleArgMet-415
 437-AsnAlaGluAspGluAlaGluGlyArgAlaSerLeuAspAspIleAsnGluThrLeu-455
 466-MetAlaArgGluLysTyr-471
 486-LysAsnAsnGlnLeuLysLeuAsnGly-494
 496-ThrLeuGlnAsnGluProGluProAspPheAspGluGlyGlyMetValSerGluProGlnGln-516
a591

AMPHI Regions - AMPHI

6-AlaPheIlePheAla-10
 17-LeuHisGluPheGlyHisTyrIleValAla-26
 61-LeuGlyGlyTyrValLysMetValAsp-69
 143-GlyAspLysIleGlnSerValAsnGlyThrProValAlaAspTrp-157
 181-SerGlyAlaGlnThrValArgThrIleAspAlaAlaGlyThrProGluAlaGlyLysIleAlaLys-202
 218-AlaGlyGlyValGluLys-223
 234-ProGlyAspArgLeu-238
 245-ProIleAlaSerTrpGlnGluTrpAlaAsnLeuThrArg-257
 304-AlaTrpAspAlaGlnIleArg-310
 313-TyrArgProSerValValArgAlaPheGly-322
 324-GlyTrpGluLysThrValSerHis-331
 335-ThrLeuLysPheGlyLysLeuIle-343
 351-HisIleSerGlyProLeuThrIleAla-359
 373-TyrLeuGluPheLeuAlaLeu-379

Antigenic Index - Jameson-Wolf

44-PhePheThrArgLysArgGlyAspThrGlu-53
 68-ValAspThrArgGluGlyGluValSerGluAlaAspLeu-80
 84-PheAspLysGlnHisProAlaLysArg-92
 129-ValGluProAspThrIleAla-135
 139-GlyPheGlnSerGlyAspLysIleGlnSer-148
 157-TrpGlySerAlaGln-161
 187-ArgThrIleAspAlaAlaGlyThrProGluAlaGlyLysIleAlaLysAsnGlnGly-205
 219-GlyGlyValGluLysGlySerProAlaGluLysAlaGlyLeuLysProGlyAspArgLeuThrAlaAlaAsp
 GlyLysProLeu-246
 254-AsnLeuThrArgGlnSerProGlyLysIle-264
 268-TyrGluArgAlaGlyGlnThrHisThrAlaAspIleArgProAspThrValGluGlnProAspHisThrLeu
 -291
 295-ValGlyLeuArgProGlnProAspArgAlaTrp-305
 307-AlaGlnIleArgArgSerTyrArgProSerVal-317
 327-LysThrValSerHisSer-332
 343-IleSerGlyAsnAla-347
 362-AlaGlyGlnSerAla-366
 408-IleArgGlyLysProLeuGlyGluArgValGln-418

Hydrophilic Regions - Hopp-Woods

44-PhePheThrArgLysArgGlyAspThr-52
 68-ValAspThrArgGluGlyGluValSerGluAlaAspLeu-80
 84-PheAspLysGlnHisProAlaLysArg-92
 129-ValGluProAspThrIleAla-135
 139-GlyPheGlnSerGlyAspLysIleGlnSer-148
 193-GlyThrProGluAlaGlyLysIleAlaLys-202
 220-GlyValGluLysGlySerProAlaGluLysAlaGlyLeuLysProGlyAspArgLeuThrAlaAlaAspGly
 LysPro-245
 256-ThrArgGlnSerProGlyLysIle-264
 268-TyrGluArgAlaGlyGln-273
 277-AlaAspIleArgProAspThrValGluGlnProAsp-288
 299-ProGlnProAspArgAlaTrp-305
 308-GlnIleArgArgSerTyrArg-314
 362-AlaGlyGlnSerAla-366
 411-LysProLeuGlyGluArgValGln-418
a592
AMPHI Regions - AMPHI
 6-PheGlyGlnIlePheSer-11

21-GlyGlyLeuLeuGlyGlyLeuIle-28
 50-AlaProAsnAlaAlaAlaAla-57
 65-GlnGlyMetIleGlnMetLeuGlyValPheValAsp-76
 94-ProTyrGlyAspLeu-98
 109-ValSerGlnValGlyGlnTrp-115
 153-ThrAlaValPheArgMet-158
 165-TyrPheGlyAlaValIla-170
 185-IleMetAlaTrpIleAsnLeuValAlaIleLeuLeuLeuSer-198

Antigenic Index - Jameson-Wolf

35-GlyIleLysArgGlyLeuTyrSerGluAlaGlyMetGlySerAlaProAsnAla-53
 57-AlaGluValLysHisProValSer-64
 93-GlnProTyrGlyAspLeuSerGly-100
 137-AlaTyrAlaGluSerAsnVal-143
 206-ArgAspTyrThrAlaLysLeuLysMetGlyLysAspProGluPheLysLeuSerGluHisProGlyLeuLys
 ArgArgIleLysSerAspValTrp-237

Hydrophilic Regions - Hopp-Woods

35-GlyIleLysArgGlyLeuTyr-41
 57-AlaGluValLysHisProVal-63
 212-LeuLysMetGlyLysAspProGluPheLysLeuSerGlu-224
 226-ProGlyLeuLysArgIleLysSer-234
a593
AMPHI Regions - AMPHI
 6-GlyLeuCysLysArgPheGlyGlyLysThr-15
 41-SerThrLeuLeuAsnMetIleAlaGlyIleValArg-52
 67-HisMetSerAlaLeuGlu-92
 102-LysMetProLysAla-106
 125-AlaHisArgLysProXxxLysLeuSerGlyGlyGlu-136
 159-PheSerSerLeuAsp-163
 165-HisLeuArgAspArgLeuArgArgMet-173
 213-CysGlyThrProGluThrLeuValGlnThrProAlaGlyValGlnValAlaHisLeuMetGly-233

Antigenic Index - Jameson-Wolf

6-GlyLeuCysLysArgPheGlyGlyLysThrValAlaAsp-18
 24-ValGlyArgGlyLysIle-29
 33-LeuGlyArgSerGlyCysGlyLysSerThr-42
 50-IleValArgProAspGlyGlyGlu-57
 61-AsnGlyGluAsnIleThrArgMetProProGluLysArgArgIle-75
 99-LysMetGlnLysMetProLysAlaGluAlaGluSer-110
 119-ValGlyLeuGluAsnGluAlaHisArgLysProXxxLysLeuSerGlyGlyGluLysGlnArgLeuAlaLeu
 -142
 157-GluSerPheSerSerLeu-162
 164-ThrHisLeuArgAspArgLeuArgArgMetThrAlaGluArgIleArgLysGlyGlyIle-183
 190-HisSerProGluGluAlaCysThrAlaAlaAspGluIleAlaVal-204
 206-HisGluGlyLysIleLeuGlnCysGlyThrProGluThrLeu-219
 233-GlyLeuProAsnThrAspAspAspArgHisIle-243
 248-ValArgPheAspGlnAspGlyMetGluCysArgValLeuSer-261
 263-ThrCysLeuProGluSer-268
 291-GlyGluIleSerGlyAsnAspThrValArgIleHisIleGluAspArgGluIleValArgPheArg-312

Hydrophilic Regions - Hopp-Woods

6-GlyLeuCysLysArgPheGlyGly-13
 25-GlyArgGlyLysIle-29
 36-SerGlyCysGlyLys-40

51-ValArgProAspGlyGly-56
 68-MetProProGluLysArgArgIle-75
 99-LysMetGlnLysMetProLysAlaGluAlaGluSer-110
 119-ValGlyLeuGluAsnGluAlaHisArgLysProXxxLysLeuSerGlyGlyGluLysGlnArgLeuAlaLeu-142
 164-ThrHisLeuArgAspArgLeuArgArgMetThrAlaGluArgIleArgLysGlyGly-182
 191-SerProGluGluAlaCysThrAlaAlaAspGluIleAlaVal-204
 206-HisGluGlyLysIle-210
 236-AsnThrAspAspAspArgHisIle-243
 248-ValArgPheAspGlnAspGlyMetGluCysArgValLeuSer-261
 291-GlyLeuSerGly-295
 297-AspThrValArgIleHisIleGluAspArgGluIleValArgPheArg-312
a594
AMPHI Regions - AMPHI
 21-SerIleLeuArgLeu-25
 108-AlaGlyArgGluCysGlnGluThrAlaAlaAla-118
 138-AlaIleLysArgCysAsn-143

Antigenic Index - Jameson-Wolf
 1-MetGlyAlaAspThrAspGlyAspLysAspValArgLeuAsnArgThr-16
 51-ValGluHisProAsnArgPhe-57
 75-HisLeuAspGlySerThrGlyGly-82
 86-PheArgArgGluLysThrGlyHisLysArgArgCysHisThrGlnCys-101
 103-HisSerAlaArgAlaAlaGlyArgGluCysGlnGluThr-115
 137-ArgAlaIleLysArgCysAsn-143

Hydrophilic Regions - Hopp-Woods
 1-MetGlyAlaAspThrAspGlyAspLysAspValArgLeuAsnArg-15
 86-PheArgArgGluLysThrGlyHisLysArgArgCysHis-98
 105-AlaArgAlaAlaGlyArgGluCysGlnGluThr-115
 137-ArgAlaIleLysArgCysAsn-143
a595
AMPHI Regions - AMPHI
 20-CysGlnProProGluAla-25
 140-AlaAspLeuGluLysLeuSerGlnProLeuAla-150
 157-GlnGlyGlyValLysGluLeuVal-164
 169-ThrPheThrGluAlaValLysAlaGlyAspIleGluLysAla-182
 196-IleGluProIleAlaGluLeuPheSerGluLeuAspPro-208
 224-AlaGlyPheThrGlyPheHisArg-231
 243-SerGlyValLysLeuAlaAlaIleLeuMetThrAspValGluAlaLeuGlnLysGluIleAsp-264
 274-ValGlyGlyAlaSerGluLeuIleGluGluValAlaGly-286
 309-AspGlySerLysLysIleValAspLeuPheArgProLeu-321
 337-PhelysGlnValAsnGluIleLeuAlaLys-346
 351-AspGlyPheGluThrTyrAspLysLeuGlyGlu-361
 366-AlaLeuGlnAlaSerIleAsnAlaLeuAlaGluAspLeuAlaGlnLeuArgGlyIleLeuGlyLeu-387

Antigenic Index - Jameson-Wolf
 1-MetArgLysPheAsn-5
 21-GlnProProGluAlaGluLysAlaAlaPro-30
 32-AlaSerGlyGluAlaGlnThrAlaAsnGluGlyGlySer-44
 50-AsnAspAsnAlaCysGluProMetGlu-58
 70-IleLysAsnAsnSerGlyArgLysLeuGluTrpGluIle-82
 87-MetValValAspGluArgGluAsnIleAla-96
 98-GlyLeuSerAspLysMetThr-104
 108-LeuProGlyGluTyrGluMet-114

-531-

120-ThrAsnProArgGlyLysLeuValValThrAspSerGlyPheLysAspThrAlaAsnGluAlaAspLeuGlu
LysLeuSer-146
158-GlyGluValLysGluLeuValAlaLysThrLysThrPheThrGluAlaValLysAlaGlyAspIleGluLys
AlaLysSerLeuPheAla-187
189-ThrArgValHistYrgArgIleGluProIle-199
204-SerGluLeuAspProValIleAspAlaArgGluAspAspPheLysAspGlyAlaLysAspAlaGly-225
238-ValGluLysAspValSerGlyValLysGluIleAlaAla-250
252-LeuMetThrAspValGluAlaLeuGlnLysGluIleAsp-264
269-ProProGlyLysValValGlyGlyAla-277
279-GluLeuIleGluGluValAlaGlySerLysIleSerGlyGluGluAspArgTyrSerHisThrAspLeuSer
AspPheGlnAlaAsnValAspGlyLysIleValAsp-316
322-IleGluThrLysAsnLysAlaLeuLeuGluLysThrAspThrAsnPheLysGlnValAsn-341
345-AlaLysTyrArgThrLysAspGlyPheGluThrTyrAspLysLeuGlyGluAlaAspArgLysAlaLeu-36
7
374-LeuAlaGluAspLeuAlaGln-380

Hydrophilic Regions - Hopp-Woods

1-MetArgLysPheAsn-5
21-GlnProProGluAlaGluLysAlaAlaPro-30
32-AlaSerGlyGluAlaGlnThrAlaAsnGluGlyGlySer-44
52-AsnAlaCysGluProMetGlu-58
72-AsnAsnSerGlyArgLysLeuGluTrpGluIle-82
87-MetValValAspGluArgGluAsnIle-95
99-LeuSerAspLysMetThr-104
110-GlyGluItyrGluMet-114
122-ProArgGlyLysLeuValVal-128
131-SerGlyPheLysAspThrAlaAsnGluAlaAspLeuGluLysLeuSer-146
158-GlyGluValLysGluLeuValAlaLysThrLysThrPheThrGluAlaValLysAlaGlyAspIleGluLys
AlaLysSerLeuPheAla-187
189-ThrArgValHistYrgArgIleGluProIle-199
204-SerGluLeuAspProValIleAspAlaArgGluAspAspPheLysAspGlyAlaLysAspAlaGly-225
238-ValGluLysAspValSerGlyValLysGluIleAlaAla-250
252-LeuMetThrAspValGluAlaLeuGlnLysGluIleAsp-264
279-GluLeuIleGluGluValAlaGly-286
288-LysIleSerGlyGluGluAspArgTyrSerHis-298
308-ValAspGlySerLysLysIleValAsp-316
322-IleGluThrLysAsnLysAlaLeuLeuGluLysThrAspThrAsnPhe-337
347-TyrArgThrLysAspGlyPheGluThrTyrAspLysLeuGlyGluAlaAspArgLysAlaLeu-367
374-LeuAlaGluAspLeuAlaGln-380
a596

AMPHI Regions - AMPHI

9-MetLeuArgValSerLysValVal-16
50-LeuArgIleMetAlaGlyValAspLys-58
87-ValArgGluGluValGluSerGlyLeuGlyGluValAlaAlaAlaGlnLysArgLeuGluGluValTyrAlaG
luTyr-112
192-ProThrAsnHisLeuAsp-197
202-GluTrpLeuGluGlnPheLeuValArgPheProGly-213
295-AlaArgPheGluGluMetSerAsnTyr-303
322-LeuGlyAsnGluValIleGluPheValAsnValSerLysSerPhe-336
366-SerThrLeuPheLysMet-371
409-AspAsnIleAlaGlu-413
444-IleThrGlyGlnLeuSer-449
483-LeuArgAlaLeuGluAspAlaLeuLeuGluPheAla-494

Antigenic Index - Jameson-Wolf

16-ValProProGlnLysThrIleIleLysAspIleSer-27
 41-LeuAsnGlyAlaGlyLysSerThrVal-49
 54-AlaGlyValAspLysGluPheGluGlyGluAla-64
 75-LeuProGlnGluProGluLeuAspProGluLysThrValArgGluGluValGluSerGlyLeu-95
 99-AlaAlaAlaGlnLysArgLeuGluGluValTyr-109
 112-TyrAlaAsnProAspIleAspPheAspAlaLeuAlaGluGluGlnGlyArgLeuGlu-130
 136-GlySerSerThrGlyGlyGlyIlaGluHisGluLeuGluIleAlaAlaAspAlaLeuArg-155
 157-ProGluTrpAspAlaLysIleAspAsnLeuSerGlyGlyGluLysArgArgValAla-175
 181-LeuSerLysProAspMet-186
 190-AspGluProThrAsnHisLeuAspAlaGluSer-200
 219-ThrHisAspArgTyrPhe-224
 233-LeuGluGlnLysGluLysArgLeuGluAsnGluAlaLysSerGluAlaAlaArgValLysAlaMetLysGln
 GluLeuGluTrp-278
 280-ArgGlnAsnAlaLysGlyArgGlnAlaLysSerLysAlaArgLeuAlaArgPheGluGluMetSerAsnTyr
 GluTyrGlnLysArgAsnGluThrGlnGlu-313
 319-AlaGluArgLeuGlyAsnGluVal-326
 333-SerLysSerPheGlyAsp-338
 359-GlyProAsnGlyAlaGlyLysSerThrLeu-368
 373-AlaGlyLysGluGlnProAspSerGlyGluValLysIle-385
 395-AspGlnSerArgGluGlyLeuGlnAsnAspLysThrValPhe-408
 411-IleAlaGluGlyArgAspIleLeu-418
 421-GlyGlnPheGluIleProAlaArgGlnTyrLeuGlyArgPheAsnPheLysGlySerAspGlnSerLysIle
 -444
 446-GlyGlnLeuSerGlyGlyGluArgGlyArgLeuHisLeu-458
 462-LeuLeuGlyGlyGlyAsn-467
 471-LeuAspGluProSerAsnAspLeuAspValGluThr-482
 501-SerHisAspArgTrpPhe-506
 516-AlaCysGluGlyAspSerLysTrp-523
 526-PheAspGlyAsnTyrGlnGluTyrGluAlaAspLysLysArgArgLeuGlyGluGlyThrLysProLys
 ArgIleLysTyrLysProValThrArg-558

Hydrophilic Regions - Hopp-Woods

54-AlaGlyValAspLysGluPheGluGlyGluAla-64
 77-GlnGluProGluLeuAspProGluLysThrValArgGluGluValGluSerGlyLeu-95
 99-AlaAlaAlaGlnLysArgLeuGluGluValTyr-109
 113-AlaAsnProAspIleAspPheAspAlaLeuAlaGluGluGlnGlyArgLeuGlu-130
 141-GlyGlyAlaGluHisGluLeuGluIleAlaAlaAspAlaLeuArg-155
 157-ProGluTrpAspAlaLysIleAspAsn-165
 167-SerGlyGlyGluLysArgArgValAla-175
 181-LeuSerLysProAsp-185
 190-AspGluProThrAsnHisLeuAspAlaGluSer-200
 233-LeuGluGlnLysGluLysArgLeuGluAsnGluAlaLysSerGluAlaAlaArgValLysAlaMetLysGln
 GluLeuGluTrp-278
 280-ArgGlnAsnAlaLysGlyArgGlnAlaLysSerLysAlaArgLeuAlaArgPheGluGluMetSerAsn-30
 2
 304-GluTyrGlnLysArgAsnGluThrGln-312
 319-AlaGluArgLeuGlyAsnGluVal-326
 373-AlaGlyLysGluGlnProAspSerGlyGluValLysIle-385
 395-AspGlnSerArgGluGlyLeuGlnAsnAspLysThrValPhe-408
 411-IleAlaGluGlyArgAspIleLeu-418
 435-AsnPhelysGlySerAspGlnSerLysIle-444
 449-SerGlyGlyGluArgGlyArgLeuHisLeu-458
 472-AspGluProSerAsnAspLeuAspValGluThr-482

517-CysGluGlyAspSer-521
 529-AsnTyrGlnGluTyrGluAlaAspLysLysArgArgLeuGlyGluGlyThrLysProLysArgIleLys
 Tyr-553
 a597
AMPHI Regions - AMPHI
 6-SerAsnSerLeuLysGlnLeuGlnGlu-14
 45-TrpAspLysPheGlnLysLeu-51
 68-GlnIleSerArgPheValSerGly-75
 101-LeuArgTyrThrArgTyrValAsnAla-109
 111-AsnArgGluValValLysAspLeuGluLysGlnGln-122
 132-IleAsnAsnGluLeuAlaArgLeuLysLys-141
 144-AlaAsnValGlnSerLeu-149
 157-AspAlaAlaGluGlnThrGlu-163
 169-AlaLysIleAlaLysAspAlaArg-176
 189-AsnLysLeuLeuSer-193
 253-ProSerValMetGlyIleGlySerAlaAspGlyPheSerArgMetGlnGlyArgLeuLysLysProValAsp
 GlyValProThrGly-281
 302-ProAlaThrValGluSerIleAla-309
 314-SerTyrAlaAspGluLeuAspGlyTyrGlyLys-324
 336-SerIleTyrAlaGlyLeu-341

Antigenic Index - Jameson-Wolf

7-AsnSerLeuLysGlnLeuGlnGluGluArgIleArgGlnGluArgIleArgGlnGluArgIleArgGlnAlaAr
 gGlyAsnLeu-34
 36-SerValAsnArgLysGlnArgGluAlaTrpAspLysPheGlnLysLeuAsnThrGluLeuAsnArgLeuLysT
 hrGluValAlaAla-64
 74-SerGlyAsnTyrLysAsnSerGlnProAsn-83
 91-AsnAlaGluProGlyGlnLysAsnArgPhe-100
 107-ValAsnAlaSerAsnArgGluValValLysAspLeuGluLysGlnLys-123
 128-GlnGluGlnLysIleAsnAsnGluLeuAlaArgLeuLysIleGln-143
 149-LeuLeuLysLysGlnGlyValThrAspAlaAlaGluGlnThrGluSerArgArgGlnAsnAlaLysIleAla
 LysAspAlaArgLysLeuLeuGluGlnLysGlyAsnGluGlnGlnLeu-188
 191-LeuLeuSerAsnLeuGluLysLysAlaGluHisArgIleGlnAspAlaGluAlaLysArgLysLeuAla
 GluAlaArgLeuAlaAlaAlaGluLysAlaArgLysGluAlaAlaGlnGlnLysAlaGluAlaArgArgAlaGluM
 etSerAsnLeuThrAlaGluAspArgAsnIleGlnAlaProSer-254
 259-GlySerAlaAspGlyPheSerArgMetGlnGlyArgLeuLysLysProValAspGlyValProThr-280
 284-GlyGlnAsnArgSerGlyGlyAspVal-292
 314-SerTyrAlaAspGluLeuAspGlyTyrGly-323
 329-AspHisGlyGluAsnTyr-334
 345-SerValGlyLysGlyTyr-350
 354-AlaGlySerLysIleGlySerSerGlySerLeuProAspGlyGluGluGlyLeu-371
 381-ValLeuAsnProSerSerTrp-387

Hydrophilic Regions - Hopp-Woods

7-AsnSerLeuLysGlnLeuGlnGluGluArgIleArgGlnGluArgIleArgGlnGluArgIleArgGlnAlaAr
 gGlyAsn-33
 37-ValAsnArgLysGlnArgGluAlaTrpAspLysPheGlnLysLeuAsnThrGluLeuAsnArgLeuLysThrG
 luValAlaAla-64
 77-TyrLysAsnSerGln-81
 91-AsnAlaGluProGlyGlnLysAsnArgPhe-100
 110-SerAsnArgGluValValLysAspLeuGluLysGlnGlnLys-123
 128-GlnGluGlnLysIleAsnAsnGluLeuAlaArgLeuLysLysIleGln-143
 149-LeuLeuLysLysGlnGlyValThrAspAlaAlaGluGlnThrGluSerArgArgGlnAsnAlaLysIleAla
 LysAspAlaArgLysLeuLeuGluGlnLysGlyAsnGluGlnGlnLeu-188

-534-

193-SerAsnLeuGluLysLysLysAlaGluHisArgIleGlnAspAlaGluAlaLysArgLysLeuAlaGluAla
 ArgLeuAlaAlaAlaGluLysAlaArgLysGluAlaAlaGlnGlnLysAlaGluAlaArgArgAlaGluMet-240
 244-ThrAlaGluAspArgAsnIleGln-251
 267-MetGlnGlyArgLeuLysLysProValAsp-276
 286-AsnArgSerGlyGlyAspVal-292
 315-TyrAlaAspGluLeuAspGlyTyrGly-323
 356-SerLysIleGlySer-360
 363-SerLeuProAspGlyGluGluGlyLeu-371
a601

AMPHI Regions - AMPHI

7-LeuValAspGluIleAspValProAsnIleGlyArg-18
 26-AlaGlyIleProThrValPhe-32
 42-GlyLysGluLeuGlnAspAspIleAsnAsnAspAlaAlaLeuGluLysPheGluLysIleArgAlaTyrG
 lyAlaLeu-68
 70-MetGlyLeuIleSerAspValSerGluAlaAla-80
 100-SerSerGlyLysThrValAsn-106
 137-AlaAlaAlaValProGlyThrLeuValAsnLeuAlaAla-149
 169-GlyAlaAlaAlaGlu-173

Antigenic Index - Jameson-Wolf

3-ProThrGlyAsnLeuValAspGluIleAspValProAsnIleGlyArgLeuLys-20
 39-GlyTyrThrGlyLysGluLeuGlnAspAspIleAsnAsnAspAlaAlaAlaLeuGluLysPheGluLysIleA
 rgAla-64
 75-AspValSerGluAlaAlaAlaArgAlaHisThrPro-86
 97-TyrThrAlaSerSerGlyLysThrValAsn-106
 149-AlaGlyGlyThrArgLysGluValArgPheGlyHisProSerGlyThrLeuArg-167
 172-AlaGluCysGlnAspGlyGln-178
 185-ValMetSerArgSerAlaArgValMet-193
 198-ValArgValProGluAspCysPhe-205

Hydrophilic Regions - Hopp-Woods

7-LeuValAspGluIleAspVal-13
 40-TyrThrGlyLysGluLeuGlnAspAspIleAsnAsnAspAlaAlaAlaLeuGluLysPheGluLysIleArgA
 la-64
 75-AspValSerGluAlaAlaAlaArgAlaHisThr-85
 99-AlaSerSerGlyLysThrValAsn-106
 151-GlyGlyThrArgLysGluValArgPhe-159
 172-AlaGluCysGlnAsp-176
 188-ArgSerAlaArgValMet-193
 200-ValProGluAspCysPhe-205
a602

AMPHI Regions - AMPHI

7-AspLysAlaArgHis-11
 21-ValAsnArgHisGlyGln-26
 54-ArgGlnIleAlaGlnIle-59
 61-AlaGlyLeuHisValCysAsnSerVal-69
 78-HisValIleValGluMetCysAlaTrpTyr-87

Antigenic Index - Jameson-Wolf

5-GlnCysAspLysAlaArgHisMetArg-13
 20-GlnValAsnArgHisGlyGlnThrGlyAsnCysGly-31
 36-CysSerLeuGlnGlyAsnArgLysAlaGlnValPheAspThrAspLeuIleAspArgGlnIle-56
 90-SerThrGlyGluTyr-94

99-GlnMetArgAspTyrIle-104

Hydrophilic Regions - Hopp-Woods

5-GlnCysAspLysAlaArgHisMetArg-13
 20-GlnValasnArgHisGlyGln-26
 39-GlnGlyAsnArgLysAlaGlnValPheAsp-48
 50-AspLeuIleAspArgGlnIle-56
a603

AMPHI Regions - AMPHI

158-ValMetAspGluLeuAsnIlaCysIlePro-167
 172-HisAsnProAlaAsnIleSerGlyIleLeuAla-182
 186-HisPheProGlyLeuProAsnValGly-194
 199-SerPheHisGlnThrMetPro-205
 212-AlaValProArgGluLeu-217
 245-GlyLysProLeuGluAspIleArgMetIleIleAlaHis-257
 260-AsnGlyAlaSerIleThrAlaIleLysAsnGlyLysSerVal-273
 280-ThrProIleGluGly-284
 299-TyrSerTyrLeuThrSer-304
 324-LeuGlyIleSerGlu-328
 330-SerAsnAspCysArg-334
 357-ArgLeuAlaIleTyrIleAlaSerMet-365
 393-ValSerTyrLeuAsp-397

Antigenic Index - Jameson-Wolf

1-LeuSerSerArgArgArgGlyArgAsnAsnAspArgLysCysGlyIle-16
 18-PheAlaGlnArgGlyArgLeuLysHisThrProProAsnAlaHisProPheSerAspAspProThrXxxLysLysGlnProGlnThrThrArgArgAsnIleMetSer-53
 63-GlySerSerSerLeuLysGlyAlaValIleAspArgLysSerGlySer-78
 84-LeuGlyGluArgLeuThrThrProGluAla-93

96-ThrPheSerLysAspGlyAsnLysArgGlnValProLeuSerGlyArgAsnCysHis-114
 124-GluLeuGluLysHisGluLeuHisAspArgIleGln-135
 142-AlaHisGlyGlyGluLysTyrSerGlu-150
 157-AlaValMetAspGluLeuAsn-163
 203-ThrMetProGluArgAlaTyr-209
 215-ArgGluLeuArgLysLysTyrAlaPheArgArgTyrGlyPheHisGlyThrSerMetArg-234
 246-LysProLeuGluAspIleArg-252
 258-LeuGlyAsnGlyAla-262
 265-ThrAlaIleLysAsnGlyLysSerValAspThrSerMetGly-278
 289-ThrArgCysGlyAspIleAspProGlyVal-298
 311-AlaGlnValAspGluMetLeuAsnLysLysSerGly-322
 327-SerGluLeuSerAsnAspCysArgThrLeuGluIleAlaAlaAspGluGlyHisGluGlyAlaArgLeu-34
 9
 380-GlyIleGlyGluAsnSerArgAsnIleArgAlaLysThr-392
 403-IleAspThrLysAlaAsnMetGluLysArgTyrGlyAsnSerGlyIle-418
 420-SerProThrAspSerSerPro-426
 432-ProThrAsnGluGluLeu-437

Hydrophilic Regions - Hopp-Woods

1-LeuSerSerArgArgArgGlyArgAsnAsnAspArgLysCysGlyIle-16
 18-PheAlaGlnArgGlyArgLeuLysHisThrPro-28
 34-PheSerAspAspProThrXxxLysLysGlnProGlnThrThrArgArgAsnIleMet-52
 70-AlaValIleAspArgLysSerGly-77
 84-LeuGlyGluArgLeuThrThr-90

97-PheSerLysAspGlyAsnLysArgGlnValProLeuSerGlyArgAsnCysHis-114
 124-GluLeuGluLysHisGluLeuHisAspArgIleGln-135
 143-HisGlyGlyGluLysTyrSerGlu-150
 157-AlaValMetAspGluLeuAsn-163
 204-MetProGluArgIleTyr-209
 215-ArgGluLeuArgLysLysTyrAlaPhe-223
 246-LysProLeuGluAspIleArg-252
 268-LysAsnGlyLysSerValAspThr-275
 290-ArgCysGlyAspIleAspPro-296
 311-AlaGlnValAspGluMetLeuAsnLysLysSerGly-322
 328-GluLeuSerAsnAspCysArgThrLeuGluIleAlaAlaAspGluGlyHisGluGlyAlaArgLeu-349
 381-IleGlyGluAsnSerArgAsnIleArgAlaLysThr-392
 403-IleAspThrLysAlaAsnMetGluLysArgTyrGly-414
 433-ThrAsnGluGluLeu-437
a604

AMPHI Regions - AMPHI

36-HisArgValValGlnPheAla-42
 53-ValGlyGlyIleHisGlyPheAlaThr-61
 78-ValArgAlaGlyGlySerPhe-84
 95-ArgThrValSerAlaAspPheLeuGluPhePheGlnSerCysGlyIle-110
 114-ValValLeuGlnIlePheAlaArgValAlaGlnValGlyGlyIleGlnGluAsn-131
 148-ArgHisIleAsnPheIleAspGlnIleAlaGlyTrpGlu-160
 166-ValGlyTrpIleLysLysPheAsp-173
 191-PheGlnAsnCysAlaValLeuHisArg-199

Antigenic Index - Jameson-Wolf

11-AlaAlaCysGlyLysValAspGlnArgThrGlyHisGlyGlyGlyArgAsnGlyAsnArgGlyGlyThrH
 is-35
 67-GlyGlyGlyArgAspGluGlyAspPheArgArgValArgAlaGlyGlySerPhe-84
 127-GlyIleGlnGluAsnGlyArgAsnAlaArgValAspGluArgGlyPheGln-143
 175-TyrPheGlyCysArgGluArgTyrAlaVal-184
 201-MetGlyAsnAsnGly-205
 211-LeuProAspPheAspCysAlaAsp-218

Hydrophilic Regions - Hopp-Woods

14-GlyLysValAspGlnArgThrGlyHis-22
 24-GlyGlyGlyArgAsnGlyAsnArgGlyGlyThrHis-35
 68-GlyGlyArgAspGluGlyAspPheArgArgValArgAla-80
 127-GlyIleGlnGluAsnGlyArgAsnAlaArgValAspGluArgGlyPhe-142
 178-CysArgGluArgTyrAlaVal-184
 214-PheAspCysAlaAsp-218
a605

AMPHI Regions - AMPHI

13-ArgGlnIleTrpLysIleAlaAsp-20
 38-ThrLeuPheTyrArgPheIleSerGluAsnPheThrAspTyrMetGln-53
 107-LysLeuLysGluIlePheThrAlaIle-115
 128-IleLysGlyLeuPheAspAspPheAsp-136
 141-AргLeuGlySerThr-145
 155-AlaValLeuLysGlyValAlaGluLeu-163
 173-IleAspLeuPheGlyAspAlaTyrGluTyrLeuIleSerAsn-186
 188-AlaAlaAsnAlaGlyLys-193
 204-ValSerLysLeuIleAlaArg-210
 217-GluLysValAsnLysIleTyrAspPro-225

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240-PheAspGluHisIle-244
 291-AspSerLysProPheAspAlaValValSerAsn-301
 341-HisAlaLeuAsnTyr-345
 355-ValSerPheProGly-359
 433-GluHisIleAlaGluIleValLysLeuPheAla-443
 452-AlaGlnAsnAlaAlaGlnGlnThr-459
 471-SerTyrValGluProGlu-476
 478-ThrArgGluIleIleAspIle-484
 489-AlaGluIleSerGluThrValAlaLysIleGluArgLeuArgArgGluIleAspGluValIleAlaGluIle
 Glu-513

Antigenic Index - Jameson-Wolf

5-IleGlnGlnArgAlaGlnLeu-11
 18-IleAlaAspGluValArgGlyAlaValAspGlyTrpAsp-30
 44-IleSerGluAsnPheThrAspTyrMetGlnAlaGlyAspSerSerIleAsp-60
 63-AlaMetProAspSer-67
 71-ProGluIleLysAspAspAspAlaValLysVal-80
 98-AlaHisGlnAsnGluGluLeuAsnThrLysLeuLysGlu-110
 116-GluSerSerAlaSerGlyTyrProSerGluGlnAspIleLysGlyLeuPheAspAspPheAspThrThrSer
 SerArgLeu-142
 146-ValAlaAspLysAsnLysArgLeu-153
 164-AspPheGlySerPheGluAspHisHis-172
 190-AsnAlaGlyLysSerGlyGlyGluPhePheThr-200
 215-GlyGlnGluLysValAsnLysIleTyrAspProAlaCysGlySerGlySer-231
 235-GlnAlaLysGlnPheAsp-241
 253-GluIleAsnHisThrThrTyrAsn-260
 280-LeuGlyAspThrLeuThrAsnProLysLeuLysAspSerLysProPheAspAla-297
 310-GlySerGlyAspProThrLeuIleAsnAsnAspAspArgPheAlaPro-324
 330-ProLysSerLysAlaAsp-335
 345-TyrLeuSerGlyArgGlyArgAlaAla-353
 362-TyrArgGlyGlyAlaGluGlnLysIleArg-371
 403-LeuSerLysHisLysAspAsnThrAsp-411
 418-GlyGlyPhePheLysLysGluThrAsnAsnAsnValLeuThrGluGluHisIle-435
 442-PheAlaAspLysAlaAspVal-448
 458-GlnThrValLysAspAsnGlyTyr-465
 473-ValGluProGluAspThrArgGluIleIleAsp-483
 490-GluIleSerGluThrValAlaLysIleGluArgLeuArgArgGluIleAspGluValIleAla-510

Hydrophilic Regions - Hopp-Woods

18-IleAlaAspGluValArgGlyAlaValAsp-27
 55-GlyAspSerSerIle-59
 71-ProGluIleLysAspAspAlaValLysVal-80
 98-AlaHisGlnAsnGluGluLeuAsnThrLysLeuLysGlu-110
 122-TyrProSerGluGlnAspIleLysGlyLeuPheAspAspPheAspThrThrSerSerArgLeu-142
 146-ValAlaAspLysAsnLysArgLeu-153
 167-SerPheGluAspHisHis-172
 191-AlaGlyLysSerGlyGly-196
 215-GlyGlnGluLysValAsnLysIleTyrAsp-224
 235-GlnAlaLysLysGlnPheAsp-241
 287-ProLysLeuLysAspSerLysProPhe-295
 316-LeuIleAsnAspAspArgPheAla-323
 330-ProLysSerLysAlaAsp-335
 348-GlyArgGlyArgAla-352
 364-GlyGlyAlaGluGlnLysIleArg-371
 404-SerLysHisLysAspAsnThrAsp-411

-538-

419-GlyPhePheLysLysGluThrAsn-426
 430-LeuThrGluGluHisIle-435
 442-PheAlaAspLysAlaAspVal-448
 458-GlnThrValLysAspAsnGly-464
 473-VaiGluProGluAspThrArgGluIleIleAsp-483
 490-GluIleSerGluThrValAlaLysIleGluArgLeuArgArgGluIleAspGluValIleAla-510
 a606

AMPHI Regions - AMPHI

72-LeuLeuAspHisMetThrArgAspGlu-80
 90-AlaHisValGlyAsnGlyAsp-96
 100-LeuThrLeuIleGlnGlyValValAsnThrPhe-110
 116-ArgIleAlaAsn-120
 139-SerMetValPheGlnIleLeuPheGlyPheLeuAlaSerLeuIleVal-154
 171-LysLeuValGlyAlaProLysMetIleSerAlaLeuGlnArg-184
 191-AspLeuProGluGluMetAsnAla-198

Antigenic Index - Jameson-Wolf

13-GluValIleAspThrProArgThrGluGluGluAla-24
 31-GluAlaGlnAlaArgGlnTrpAsnLeuLysThrProGlu-43
 48-HisSerProGluProAsnAla-54
 57-ThrGlyAlaSerArgAsnSerSer-64
 75-HisMetThrArgAspGluValGluAla-83
 92-ValGlyAsnGlyAsp-96
 122-IleAlaArgAsnAsnAspGlySerGlnSerGlnGlyThr-134
 159-ArgGlnArgGluTyrArgAlaAspAlaGlyAla-169
 182-LeuGlnArgLeuLysGlyAsnProValAspLeuProGluGluMetAsn-197
 203-GlyAspThrArgAspSerLeuLeuSerThrHisProSerLeuAspAsnArgIleAlaArgLeuLysSer-222
 5

Hydrophilic Regions - Hopp-Woods

13-GluValIleAspThrProArgThrGluGluGluAla-24
 59-AlaSerArgAsnSer-63
 75-HisMetThrArgAspGluValGluAla-83
 124-ArgAsnAsnAspGlySerGlnSer-131
 159-ArgGlnArgGluTyrArgAlaAspAlaGlyAla-169
 183-GlnArgLeuLysGlyAsnPro-189
 191-AspLeuProGluGluMetAsn-197
 203-GlyAspThrArgAspSerLeu-209
 214-ProSerLeuAspAsnArgIleAlaArgLeuLysSer-225
 a607

AMPHI Regions - AMPHI

18-ArgLeuLeuThrAlaLeuAlaLeu-25
 70-PheMetGlyIleMetAlaAlaLeuAsnProMetIleAlaGln-83
 90-ThrAspGluValGlyGluThr-96
 104-GlyLeuPheLeuGlyValPheGlyMetValLeuMetTrpAlaAlaIleThrProPheArgAsnTrpLeuThr
 LeuSerAspTyrValGluGlyThrMet-136
 151-MetValHisArgAlaLeuHisAlaTyrAlaSerSer-162
 226-PhePheArgProPheGly-231
 244-PheLysGlnIleTrpLysIleGlyAla-252
 320-AlaArgTyrIleSerGlyValSerLeu-328
 337-IleThrValLeuSerLeuVal-343
 373-PheGlnProAlaAspPheThrGlnCysIleAlaSerTyrAla-386
 424-TyrGlyPheTrpThrAlaLeuIleAla-432

Antigenic Index - Jameson-Wolf

-539-

15-LysGluValArgLeu-19
 47-GlyAlaGlyLysGluAspLeuAla-54
 86-GlyAlaGlyLysThrAspGluValGlyGluThrGlyArgGlnGlyIle-101
 121-ProPheArgAsnTrp-125
 128-LeuSerAspTyrValGluGlyThr-135
 160-AlaSerSerLeuAsnArgProArgLeu-168
 234-AlaLysPheGlyLysProAspTrp-241
 311-SerLeuGlyArgArgGluPheSerArgAlaArgTyrIleSer-324
 353-TyrAsnAsnAspPro-357
 388-ArgGlyTyrLysValThrLys-394
 447-LeuCysSerArgGluMetValArgSerHisLysAlaVal-459

Hydrophilic Regions - Hopp-Woods

15-LysGluValArgLeu-19
 47-GlyAlaGlyLysGluAspLeuAla-54
 88-GlyLysThrAspGluValGlyGluThrGlyArg-98
 163-LeuAsnArgProArg-167
 312-LeuGlyArgArgGluPheSerArg-319
 390-TyrLysValThrLys-394
 447-LeuCysSerArgGluMetValArgSerHisLysAlaVal-459
a608
AMPHI Regions - AMPHI
 66-AlaValGlnLysIleLeuGln-72
 93-ValLeuSerLeuLeu-97
 103-ArgAlaSerAspGluLeuAlaArgIlePheGlyThrGln-115
 124-AspIleGlyHisGlyIleLysGlnIleGlyArgAsnIleAlaGluGlnIleGlyArgPheSerArgGluPro
 GluSerAla-150
 154-AsnGluAlaLeuAlaAspCysLeuAspGluIleSerArgLeuArgAspGlyValGluArgLeuAsnGluArg
 LeuAspArgLeu-181

Antigenic Index - Jameson-Wolf

13-LeuGlnSerProAspSerArgSerGluLeu-22
 39-LeuAlaGlyArgIleThrGluAspGlyLeuLeuSerAlaGlyAsnGlyPheAlaAspThrGluIleThrPheA
 rgAsnSerAla-66
 71-LeuGlnGlyGluProGlyAlaGlyAspIleGlyLeuGluGly-85
 98-GlySerLeuArgSerArgAlaSerAspGluLeuAla-109
 114-ThrGlnAlaAspIleGlySerArgAlaAlaAsp-124
 131-GlnIleGlyArgAsnIleAla-137
 139-GlnIleGlyArgPheSerArgGluProGluSerAlaAsnIleGlyAsn-154
 156-AlaLeuAlaAspCysLeuAspGluIleSerArgLeuArgAspGlyValGluArgLeuAsnGluArgLeuAsp
 ArgLeuGluArgAspIleTrp-186

Hydrophilic Regions - Hopp-Woods

15-SerProAspSerArgSerGluLeu-22
 39-LeuAlaGlyArgIleThrGluAspGlyLeu-48
 56-AlaAspThrGluIleThrPhe-62
 74-GlyGluProGlyAlaGly-79
 81-IleGlyLeuGluGly-85
 100-LeuArgSerArgAlaSerAspGluLeuAla-109
 116-AlaAspIleGlySerArgAlaAlaAsp-124
 139-GlnIleGlyArgPheSerArgGluProGluSerAlaAsnIleGly-153
 156-AlaIleAlaAspCysLeuAspGluIleSerArgLeuArgAspGlyValGluArgLeuAsnGluArgLeuAsp
 ArgLeuGluArgAspIleTrp-186
a609
AMPHI Regions - AMPHI

-540-

15-ThrLeuAspAlaPheVal-20
 30-HisHisIlePheHisGluPheArgValPheValGlyPhePhe-43
 52-PheGluGlnAlaValGlu-57
 67-IleAspAspPheLeu-71
 114-ValAlaValCysThrVal-119

Antigenic Index - Jameson-Wolf

10-AlaLeuAspAspGluThrLeu-16
 20-ValGlyAsnGlnArgSerSerAspIleAla-29
 69-AspPheLeuAspThrAspPheGlyIle-77
 79-SerGlnAlaAspGlyAsnValArg-86
 99-GlyThrArgAlaLysArgGlyTyrGlyAsnHisAspLeu-111
 124-ArgGluAlaAspIle-128

Hydrophilic Regions - Hopp-Woods

10-AlaLeuAspAspGluThrLeu-16
 23-GlnArgSerSerAspIle-28
 79-SerGlnAlaAspGlyAsnVal-85
 100-ThrArgAlaLysArgGlyTyrGly-107
 124-ArgGluAlaAspIle-128

a610

AMPHI Regions - AMPHI

6-MetGlnPheProTyr-10
 14-SerAlaSerArgMetArgArgMetArgArg-23
 98-GluArgAlaGlnGluAlaTyr-104
 111-ProSerThrValArgAlaLeuArgGluArg-120
 187-IleArgGluAlaLeuGlu-192
 208-TyrAlaSerAlaPheTyrGlyProPheArgAsp-218
 223-SerGlyAsnLeuGlyLysAlaAsp-230
 268-LeuAspValValArgArgValLysAspGlu-277
 296-AlaAlaValAlaAsn-300

Antigenic Index - Jameson-Wolf

11-ArgAsnValSerAlaSerArgMetArgArgMetArgArgAspAspPheSerArgArgLeuMetArgGluHisT
 hrLeuThrAlaAsp-40
 50-GlySerAlaArgGluGluAspValProSerMetProGlyValLysArgGlnSerLeuAsp-69
 75-AlaGluGluAlaValLys-80
 94-AlaAsnLysThrGluArgAlaGlnGluAlaTyrAsnProGluGlyLeuVal-110
 115-ArgAlaLeuArgGluArgPhePro-122
 139-GlyGlnAspGlyLeuThrAspGluAsnGlyTyrValMetAsnAspGluThrVal-156
 175-AlaProSerAspMetMetAspGlyArgIleGlyAlaIleArgGluAlaLeuGluAspAlaGlyHis-196
 215-ProPheArgAspAlaValGlySerSerGlyAsnLeuGlyLysAlaAspLysLysThrTyrGlnMetAspPro
 AlaAsnThrAspGluAlaLeuHis-246
 250-LeuAspIleGlnGluGlyAlaAsp-257
 270-ValValArgArgValLysAspGluPheGlyVal-280
 302-TrpLeuAspGlyGlyLysValVal-309
 317-LysArgAlaGlyAlaAspGly-323
 331-GluAlaAlaLysMetLeuLysArg-338

Hydrophilic Regions - Hopp-Woods

14-SerAlaSerArgMetArgArgMetArgArgAspAspPheSerArgArgLeuMetArgGluHisThrLeuThrA
 la-38
 50-GlySerAlaArgGluGluAspValProSer-59
 61-ProGlyValLysAspGlnSerLeuAsp-69
 75-AlaGluGluAlaValLys-80

-541-

95-AsnLysThrGluArgAlaGlnGluAlaTyrAsn-105
 115-ArgAlaLeuArgGluArgPhePro-122
 141-AspGlyLeuThrAspGluAsnGly-148
 151-MetAsnAspGluThrVal-156
 178-AspMetAspGlyArgIleGlyAlaIleArgGluAlaLeuGluAspAlaGly-195
 216-PheArgAspAlaValGly-221
 225-AsnLeuGlyLysAlaAspLysLysThrTyrGln-235
 238-ProAlaAsnThrAspGluAlaIleuHis-246
 250-LeuAspIleGlnGluGlyAlaAsp-257
 270-ValValArgArgValLysAspGluPheGly-279
 317-LysArgAlaGlyAla-321
 331-GluAlaAlaLysMetLeuLysArg-338
a611
AMPHI Regions - AMPHI
 15-CysArgLeuPheGlyLysLeuSerLeu-23
 26-ArgLeuLeuLeuGlyLeu-31
 48-ArgSerValArgArgValIle-54
 63-GlnValValAlaVal-67
 104-ValpheIleGluAspPheVal-110
 129-LeuGlyPheLeuGlyAsnValLeuArgThr-138

Antigenic Index - Jameson-Wolf
 1-MetProSerGluAsnArgMetGlyLysArgGlnLeuAla-13
 32-CysArgSerGlyValCysArgGlyArgCys-41
 45-PheProSerArgSerValArgArgValIlePheArgArgValArgIle-60
 119-AsnProAlaAspPheArgIle-125
 142-AlaSerGlnGluAsp-146

Hydrophilic Regions - Hopp-Woods
 1-MetProSerGluAsnArgMetGlyLysArgGlnLeuAla-13
 35-GlyValCysArgGlyArgCys-41
 53-ValIlePheArgArgValArgIle-60
 121-AlaAspPheArgIle-125
 142-AlaSerGlnGluAsp-146
a612
AMPHI Regions - AMPHI
 6-AsnIleAlaLysLysLeuAlaGlyVal-14
 55-AlaAspLysAlaValGluLysCysAlaGluAsnValLeu-67
 81-GlyAsnPheProAsn-85
 101-AsnProTyrXxxLysLeuAsnLysSerLysSerProAspIlePheArgArgPhePheXxxGlyHisSer-12
 3

Antigenic Index - Jameson-Wolf
 7-IleAlaLysLysLeuAlaGlyValAsp-15
 17-IleAlaPheAspPheAspGly-23
 27-AspPheGlyArgAspAspAlaValArgHisSerGlyVal-39
 57-LysAlaValGluLysCysAlaGlu-64
 97-GlyHisHisArgAsnProTyrXxxLysLeuAsnLysSerLysSerProAspIlePheArg-116

Hydrophilic Regions - Hopp-Woods
 7-IleAlaLysLysLeuAlaGlyValAsp-15
 28-PheGlyArgAspAspAlaValArg-35
 57-LysAlaValGluLysCysAlaGlu-64
 105-LysLeuAsnLysSerLysSerProAspIlePhe-115
a613

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AMPHI Regions - AMPHI

7-SerArgArgSerLeu-11
 95-MetProArgMetArgSer-100
 103-SerProMetSerProAla-108
 115-ArgIlePheCysThrAlaLeuLeuArgLys-124
 140-SerSerValMetArgPro-145
 168-LeuSerGlyLeuCysArgIle-174

Antigenic Index - Jameson-Wolf

1-MetSerArgSerSerArgSerArgArgSerLeuArgArgSerThrProSerArg-18
 23-SerSerArgGlnSerAlaArgAla-30
 35-PheAlaAspSerGlySerArgGluAsnLeu-44
 73-ProLysIleArgAlaAsnSerSerAspAlaArgGluArgArgLeuProSerArgAspSerThrAla-94
 96-ProArgMetArgSerProSerSerProMetSerProAlaProGlySerProProTrp-114
 130-AlaProProPheProAlaGluSerLysProSerSerValMetArgProAlaSer-147
 161-LysAlaAlaSerSerGluArgLeuSerGlyLeuCysArgIleArgArg-176
 178-MetMetGlyArgArgAlaAspIlePheSerAspArgGlyGlyGlu-192

Hydrophilic Regions - Hopp-Woods

1-MetSerArgSerSerArgSerArgArgSerLeuArgArgSerThrProSer-17
 24-SerArgGlnSerAlaArgAla-30
 38-SerGlySerArgGluAsnLeu-44
 73-ProLysIleArgAlaAsnSerSerAspAlaArgGluArgArgLeuProSerArgAspSerThrAla-94
 96-ProArgMetArgSerProSer-102
 133-PheProAlaGluSerLysProSerSerValMetArg-144
 161-LysAlaAlaSerSerGluArgLeuSerGly-170
 172-CysArgIleArgArg-176
 178-MetMetGlyArgArgAlaAspIlePheSerAspArgGlyGlyGlu-192
a614

AMPHI Regions - AMPHI

20-SerGlnPheIleGlnGlnVal-26
 65-AsnLeuIleLysThrLeuLeuAsp-72
 90-AlaLeuPheTyrSerLeuLeuProValLeu-99
 144-ValAlaGlyCysAspGluAlaLysGluGluValGlnGluIleValAspTyrLeuLysAlaProAsnArgTyr
 GlnSerLeu-170
 210-AspPheValGluMetPheVal-216
 222-ArgValArgAspMetPheGluGln-229
 242-GluIleAspAlaValGlyArg-248
 295-ProAlaLeuGlnArgProGlyArgPheAsp-304
 333-SerValAspLeuLeuSerLeuAla-340
 349-AlaAspLeuAlaAsnLeuValAsn-356

Antigenic Index - Jameson-Wolf

7-LeuAspGlyLysLysGluAspAsnGlyGlnIleGlu-18
 26-ValAsnAsnGlyGluValSerGly-33
 45-LeuIleLysGlyGluArgThrAspLysSerThrPhe-56
 60-AlaProLeuAspAspAsnLeuIle-67
 70-LeuLeuAspLysAsnValArgValLysValThrProGluGluLysProSerAla-87
 111-MetGlnThrGlyGlyGlyLysGlyGly-120
 123-SerPheGlyLysSerArgAlaArgLeuLeuAspLysAspAlaAsnLys-138
 145-AlaGlyCysAspGluAlaLysGluGluValGlnGlu-156
 161-LeuLysAlaProAsnArgTyrGlnSerLeuGlyGlyArgValProArgGly-177
 182-GlySerProGlyThrGlyLysThrLeuLeu-191
 207-SerGlySerAspPhe-211
 219-GlyAlaSerArgValArgAspMetPheGluGlnAlaLysLysAsnAla-234

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241-AspGluIleAspAlaValGlyArgGlnArgGlyAlaGlyLeuGlyGlyAsnAspGluArgGluGlnThr
 Leu-265
 272-MetAspGlyPheGluSerAsnGln-279
 287-ThrAsnArgProAspValLeuAspProAlaLeuGlnArgProGlyArgPheAspArg-305
 311-LeuProAspIleArgGlyArgGluGlnIle-320
 323-ValHisSerLysLysValProLeuAspLysSerValAsp-335
 341-ArgGlyThrProGlyPheSerGly-348
 362-AlaGlyArgArgAsnLysValLysValAspGlnSerAspLeuLysThrProLysThrLysSer-382

Hydrophilic Regions - Hopp-Woods

7-LeuAspGlyLysLysGluAspAsnGlyGln-16
 27-AsnAsnGlyGluValSer-32
 46-IleLysGlyGluArgThrAspLysSerThr-55
 61-ProLeuAspAspAsnIleIle-67
 70-LeuLeuAspLysAsnValArgValLysValThrProGluGluLysProSer-86
 125-GlyLysSerArgAlaArgLeuLeuAspLysAspAlaAsnLys-138
 145-AlaGlyCysAspGluAlaLysGluGluValGlnGlu-156
 162-LysAlaProAsnArg-166
 171-GlyGlyArgValProArg-176
 221-SerArgValArgAspMetPheGluGlnAlaLysLysAsnAla-234
 241-AspGluIleAspAlaValGlyArgGlyArgGlyAlaGly-253
 256-GlyGlyAsnAspGluArgGluGlnThr-264
 273-AspGlyPheGluSer-277
 287-ThrAsnArgProAspValLeuAsp-294
 296-AlaLeuGlnArgProGlyArgPheAspArg-305
 312-ProAspIleArgGlyArgGluGlnIle-320
 324-HisSerLysLysValProLeuAspLysSerValAsp-335
 362-AlaGlyArgArgAsnLysValLysValAspGlnSerAspLeuLysThrProLysThrLys-381
a616

AMPHI Regions - AMPHI

6-LysMetValValGlyLeu-11
 13-AsnProGlyLysGluTyrGlu-19
 48-PheGlyGluValAlaArgAla-54
 77-ValAlaAlaLeuAlaGlnPheTyrLys-85
 115-GlyHisAsnGlyLeuLysAspIle-122
 161-ProThrAspArgCysArgArgGlnIlePro-170
 174-ThrArgHisProCysArgGlnMetArgGly-183
 201-ThrAlaCysSerArgPheProTyr-208
 265-AlaProValGlnAsnLeuProAsnValAla-274
 297-GlyGlyIleTyrSerLeuLeuPhe-304
 317-PheAspLysAlaAla-321
 355-CysPheAlaLeuPheSerGluCysAlaGlnAlaPhe-366
 368-AlaThrArgThrGlySerLeuGlyAspValLeuAlaAspMetAlaGlyThrValLeu-386

Antigenic Index - Jameson-Wolf

11-LeuGlyAsnProGlyLysGluTyrGluGlnThrArgHisAsnAlaGlyPhe-27
 39-AlaSerPheLysGluGluLysLysPhePhe-48
 51-ValAlaArgAlaThrLeuProAspGlyAsp-60
 65-LysProThrThrPheMetAsnArgSerGlyGlnAla-76
 86-IleLysProGluGlu-90
 96-AspGluLeuAspIleProCysGlyArgIleLysPhe-107
 109-LeuGlyGlyAsnGlyGlyHisAsnGlyLeuLysAspIleGlnAla-124
 127-GlyThrAlaAspTyrTyrArg-133
 138-IleGlyHisProGlyAspArgAsnLeu-146

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152-LeuAsnLysProSerThrGluXxxProProThrAspArgCysArgArgGlnIleProAlaSerHisThrArg
 HisProCysArgGlnMetArgGlyAsnProLeuPro-187
 190-GlnMetThrArgCysArgLeuLysProPheGlnThrAlaCysSerArgPheProTyrProAsnSerHisAsp
 ArgThrGlnAla-217
 219-TyrProAsnArgIleHisProArgHisArgArgAsnProArgPheProAla-235
 238-MetGlnHisArgArgArgThrIleArgArgArgSerGlyThrMetAlaArgHisThrCysArgThrArgArg
 GlnIlePro-264
 266-ProValGlnAsnLeuProAsnValAlaGlyArgGlyGlyMetLysLeuProArgAsnArgPheSer-28
 8
 306-AlaAlaAspThrAlaProProProPheProHisPheAspLysAlaAla-321
 336-AlaPheLysThrGlyLysLeuProIle-344
 368-AlaThrArgThrGlySerLeuGly-375
 392-ArgAlaAlaAspArgProAsp-398

Hydrophilic Regions - Hopp-Woods

13-AsnProGlyLysGluTyrGluGlnThrArgHis-23
 39-AlaSerPheLysGluGluLysLysPhePhe-48
 86-IleLysProGluGlu-90
 96-AspGluLeuAspIleProCysGlyArgIleLysPhe-107
 117-AsnGlyLeuLysAspIleGlnAla-124
 140-HisProGlyAspArgAsnLeu-146
 155-ProSerThrGluXxxProProThrAspArgCysArgArgGlnIlePro-170
 172-SerHisThrArgHisProCysArgGlnMetArgGlyAsnPro-185
 190-GlnMetThrArgCysArgLeuLysPro-198
 210-AsnSerHisAspArgThrGln-216
 223-IleHisProArgHisArgArgAsnProArg-232
 238-MetGlnHisArgArgArgThrIleArgArgArgSerGlyThrMet-252
 255-HisThrCysArgThrArgArgGlnIle-263
 274-AlaGlyArgGlyGlyGly-279
 281-LysLeuProArgAsnArgPhe-287
 306-AlaAlaAspThrAla-310
 316-HisPheAspLysAlaAla-321
 336-AlaPheLysThrGlyLys-341
 392-ArgAlaAlaAspArgProAsp-398

a619**AMPHI Regions - AMPHI**

50-LysLeuAlaAlaLeuLeu-55
 66-GlnLeuPheGlnThrLeuThrAsn-73
 134-GlnGlyGlyArgAspLeu-139
 146-GlyValIlePheGlyIleLeuPheArgSerLeuSerSerLeuLeuSerArg-162
 165-AspProGluPhe-169
 175-AsnMetPheAlaGlyAsnThrValHisSer-185
 246-AlaValValGlyProValSerPhePheGlyLeuLeuAlaAlaSerLeuAlaAsnHisPheSer-266
 303-LeuSerValValValGluPhe-309

Antigenic Index - Jameson-Wolf

1-MetProSerGluLysAsnIle-7
 11-AlaGlySerSerArgPro-16
 35-AsnValLysGlyAspTrpAsp-41
 132-IleLysGlnGlyGlyArgAspLeuPro-140
 163-MetIleAspProGluGluPheThr-170
 203-TrpArgGluArgTyrArgLeu-209
 213-LeuLeuGlyArgAspGlnAla-219
 265-PheSerProSerValLysHisSerVal-273

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluLysAsnIle-7
 134-GlnGlyGlyArgAspLeuPro-140
 163-MetIleAspProGluGluPheThr-170
 203-TrpArgGluArgTyrArgLeu-209
 213-LeuLeuGlyArgAspGlnAla-219
 269-ValLysHisSerVal-273

a620

AMPHI Regions - AMPHI

9-ValAlaValSerAlaLeuSerAlaCysArgGlnAla-20
 31-TleSerAspArgSerVal-36
 67-SerThrIleLysGlnMetPheGlyTyrThrLysLeuProGluGluProLysGlyIleArgValIleTyrValT
 hrAspMetGlyAsnValThrAspTrpThr-100
 139-GlnAlaGluLysPhe-143

Antigenic Index - Jameson-Wolf

15-SerAlaCysArgGlnAlaGluGluGlyProProProLeuProArgGlnIleSerAspArgSerValGlyHis-
 38
 43-AsnLeuThrGluHisAsnGlyProLysAla-52
 57-AsnGlyLysProAspGlnProVal-64
 75-TyrThrLysLeuProGluProLysGlyIle-85
 97-ThrAspTrpThrAsnProAsnAlaAspThrGluTrpMetAspAlaLysLys-113
 125-GlyMetGlyIleGluAspAlaLeuProPheGlyAsnLysGluGlnAlaGluLysPheAlaLysAspLysGly
 GlyLysValValGlyPheAspAspMetProAspThrTyr-161

Hydrophilic Regions - Hopp-Woods

18-ArgGlnAlaGluGluGlyProProProLeu-27
 30-GlnIleSerAspArgSerVal-36
 46-GluHisAsnGlyProLys-51
 58-GlyLysProAspGln-62
 77-LysLeuProGluGluProLysGlyIle-85
 103-AsnAlaAspThrGluTrpMetAspAlaLysLys-113
 127-GlyAlaGluAspAlaLeu-132
 135-GlyAsnLysGluGlnAlaGluLysPheAlaLysAspLysGlyGlyLys-150
 155-AspAspMetProAsp-159

a622

AMPHI Regions - AMPHI

28-LeuProGluAlaValArgAsnLeuAlaArg-37
 62-GluGluIleArgTrpLeuAlaAsp-70
 112-IleLeuGlyGlnIleLysAspAlaValArgValAlaGln-124
 131-LysLysLeuAsnAlaLeuPheGlnLys-139
 142-SerValAlaLysGluVal-147
 169-GluGlnIlePheProAspIleGlyAsp-177
 187-GluMetIleGluLeuValAla-193
 214-AlaGlnGluLeuCysAspLys-220
 232-AspLeuProAlaIleLeuHis-238
 288-AspLeuAsnAspAla-292
 297-ValAspAspMetValAsnIleValGlnSerGly-307
 324-GluLysValAlaGluPheValArgGlnGln-333
 345-LeuArgAspGluGlyGluLys-351
 354-LysGlnValLeuGluAsnAlaMetLysGlnLeuAlaLys-366
 384-LysLeuLeuLysSerProThrGlnThrLeuAsnLysAlaGlyGlu-398

Antigenic Index - Jameson-Wolf

16-SerIleArgGluLysLeuAla-22

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30-GluAlaValArgAsnLeuAlaArgSerAsnAlaAla-41
 49-ThrCysAsnArgThrGlu-54
 57-CysValGlyAspSerGluGluIleIle-65
 75-ProIleGluGluIleSerProTyrLeu-83
 90-GluThrValArgHis-94
 115-GlnIleLysAspAlaValArgValAlaGlnGluGlnGluSerMetGlyLysLysLeu-133
 142-SerValAlaLysGluValArgThrAspThrAlaValGlyGluAsnSerVal-158
 174-AspIleGlyAspIleAsn-179
 199-LysSerProArgLeu-203
 210-ThrLeuAlaArgAlaGlnGluLeuCysAspLysLeuGlyValAsnAlaGlu-226
 257-GlyMetValGluArgAlaLeuLysGlnArgGlnSer-268
 277-AlaValProArgAspIleGluAlaGluValGlyAspLeuAsnAsp-291
 305-GlnSerGlyLysGluAlaArgGlnLysAlaAlaAlaAla-317
 321-LeuValSerGluLysValAlaGluPheValArgGlnGlnGlyArgGlnSerVal-339
 343-ArgAlaLeuArgAspGluGlyLysAlaArgLysGlnValLeu-357
 368-AlaThrAlaGluGluValLeuGlu-375
 381-LeuThrAsnLysLeuLeuHisSerProThrGlnThrLeuAsnLysAlaGlyGluGluAspLysAspLeuVal
 -404

Hydrophilic Regions - Hopp-Woods

16-SerIleArgGluLysLeuAla-22
 30-GluAlaValArgAsnLeuAlaArgSerAsnAlaAla-41
 59-GlyAspSerGluGluIleIle-65
 75-ProIleGluGluIleSer-80
 90-GluThrValArgHis-94
 115-GlnIleLysAspAlaValArgValAlaGlnGluGlnGluSerMetGlyLysLysLeu-133
 142-SerValAlaLysGluValArgThrAspThrAlaValGlyGluAsnSerVal-158
 210-ThrLeuAlaArgAlaGlnGluLeuCysAsp-219
 257-GlyMetValGluArgAlaLeuLysGlnArgGlnSer-268
 277-AlaValProArgAspIleGluAlaGluValGlyAspLeuAsn-290
 305-GlnSerGlyLysGluAlaArgGlnLysAlaAlaAlaAla-317
 321-LeuValSerGluLysValAlaGluPheValArg-331
 333-GlnGlnGlyArgGlnSer-338
 343-ArgAlaLeuArgAspGluGlyGlyLysAlaArgLysGlnValLeu-357
 368-AlaThrAlaGluGluValLeuGlu-375
 392-ThrLeuAsnLysAlaGlyGluAspLysAspLeuVal-404

a624

AMPHI Regions - AMPHI

14-LeuLeuLeuGlyIleIleGlyIlePheLeuPro-24
 45-ArgPheHisArgTrpLeuHis-51
 58-ProMetValHisAsn-62
 92-PheProGlnArgTrpTrpValGlyAla-100
 102-SerSerValPheCysSerLeuValAlaIle-111

Antigenic Index - Jameson-Wolf

41-LysAlaSerProArgPheHisArgTrp-49
 51-HisArgHisArgTyrPheGlyProMet-59
 63-TrpGluGlnAsnGlyAlaValProArgLysAlaLys-74
 115-ArgArgProGluSer-119

Hydrophilic Regions - Hopp-Woods

67-GlyAlaValProArgLysAlaLys-74
 115-ArgArgProGluSer-119

a625

AMPHI Regions - AMPHI

-547-

25-SerGlyArgIleIleSerIleAlaAla-33
64-LysMetProProGluMetValTyrArgAla-73

Antigenic Index - Jameson-Wolf
5-ArgLysMetLysMetThrMetCysThrArgArgVal-17
57-ProPheLysSerProGlnThrLysMetProPro-67
73-AlaSerSerSerArgMetLysGly-80
96-AspAlaProLysThrLysLeuAsnGlyMetArgLysSerAsnValGln-111

Hydrophilic Regions - Hopp-Woods
5-ArgLysMetLysLysMetThrMetCysThrArgArgVal-17
60-SerProGlnThrLysMetProPro-67
74-SerSerSerArgMetLysGly-80
96-AspAlaProLysThrLysLeuAsnGlyMetArgLysSerAsnValGln-111
a627

AMPHI Regions - AMPHI
21-LeuGlnAsnLeuVal-25
56-IleAlaGluGlyLysLeuPheLeuGlyIlePheIleThrIlePheProValLeuSerIleLeuLysAlaGlyGluAlaGlyAlaLeuGlyGlyValValSerLeuValHisAspThrAlaGlyHisProIle-100
109-GlyIleLeuSerAlaPheLeuAspAsnAla-118
141-PheIleSerLeuLeuAlaValSer-148
153-PheMetGlyAlaLeuThrTyrIleGlyAsnAlaProAsnPheMetValLys-169
181-ThrPhePheGlyTyr-185

Antigenic Index - Jameson-Wolf
3-GlyLeuTrpLysProGluHisProGlyPhe-12
41-ThrProLysGlnValArgAlaGlyAsnGluPheAsnPhe-53
94-AspThrAlaGlyHis-98
128-AlaGlyGlyAspAla-132
170-AlaIleAlaGluGlnArgGlyValPro-178

Hydrophilic Regions - Hopp-Woods
5-TrpLysProGluHisProGly-11
43-LysGlnValArgAlaGlyAsn-49
170-AlaIleAlaGluGlnArgGlyVal-177
a628
AMPHI Regions - AMPHI
10-CysGlyProProAsnSerCysValSerMetLeuAlaAlaPheSerAspGlyThrSerAlaProAlaAla-32
34-HisThrTrpIleLeuArgSer-40

Antigenic Index - Jameson-Wolf
6-LysProAlaGlyCysGlyProProAsnSer-15
23-PheSerAspGlyThrSerAla-29
40-SerValLysArgLeuAsnThrSerLysProArgLeuLysSerSerAla-55
77-MetAlaAsnGlySerAlaSerThr-84
91-GlyArgValArgSerAlaValHisLysProAspTrpIleArgLeuArgArgThrSerSerProLeuLys-113
116-AsnAlaSerGlyAla-120

Hydrophilic Regions - Hopp-Woods
40-SerValLysArgLeuAsnThrSerLysProArgLeuLysSerSerAla-55
91-GlyArgValArgSerAlaValHisLys-99
101-AspTrpIleArgLeuArgArgThrSerSer-110
a629

AMPHI Regions - AMPHI
32-ArgTrpSerAspValPheSer-38

48-IleSerArgLeuProArgThrPhe-55
 116-ValAlaAlaLeuIleGlyMetLeuValPhe-125
 146-IlePheGlyGlyValValGluAlaValAlaThr-156
 167-MetLeuGlyValTrpGlnGlnGlyAsp-175
 191-GlyIleLeuAlaIlePheAla-197
 205-ThrIleLeuGlyLeuGlyGlu-211
 252-ValValProAsnIleIleSerArgLeuIleGlyAspArgLeuArgGlnSer-268
 285-IleIleGlyArgVal-289
 300-ThrValPheGlyValLeu-305

Antigenic Index - Jameson-Wolf

38-SerLeuSerAspSerGln-43
 50-ArgLeuProArgThr-54
 77-AsnArgPheValGluProSerMetAlaGlyAlaGlyGln-89
 131-ArgLeuProProThrAla-136
 174-GlyAspPheSerGly-178
 260-LeuIleGlyAspArgLeuArgGlnSer-268
 316-ArgLysProAlaHis-320

Hydrophilic Regions - Hopp-Woods

260-LeuIleGlyAspArgLeuArgGln-267
 316-ArgLysProAlaHis-320
a630
AMPHI Regions - AMPHI
 9-LeuPheProAlaMetPheTyrGlyMetTyrAsn-19
 30-ProAspLeuLeuGlnGlnSerIleAlaAsnAspTrpHisTyrAlaLeu-45
 81-GlyGlyPheTrpGluValLeuPheAla-89
 135-PheGlyGlyThrGlyLysAsnPhe-142
 169-AlaValAspGlyTyrSerGlyAlaThrAlaLeuAlaGlnTrp-182
 187-AlaAspGlyLeuLysAsnAlaile-194
 203-AspAlaPheIleGlyLeuProGlySerIleGlyGluValSer-217
 230-PheAlaArgIleIleSerTrpArgIleIleAlaGlyValMet-243
 247-IleAlaMetSerSerLeuPheAsnPhe-255
 289-ValSerAlaSerPheThrAsnValGlyLysTrpTrpTyrGlyAlaLeuIleGlyValNetCysValLeuIle
 ArgVal-314
 327-IleLeuPheAlaAsnLeuPheAlaProIlePheAspTyrPhe-340

Antigenic Index - Jameson-Wolf

91-ValArgLysHisGluIleAsnGlu-98
 133-GluValPheGlyGlyThrGlyLysAsnPheMet-143
 157-TyrProAlaAsnLeuSerGlyAspAla-165
 186-GlyAlaAspGlyLeuLys-191
 209-LeuProGlySerIleGly-214
 257-GlySerAspThrAsnAla-262
 345-AsnIleLysArgArgLysAlaArgSerAsnGly-355

Hydrophilic Regions - Hopp-Woods

91-ValArgLysHisGluIleAsn-97
 345-AsnIleLysArgArgLysAlaArgSerAsnGly-355
a638
AMPHI Regions - AMPHI
 17-LeuAlaArgPheValAspAsnVal-24
 30-IleValAspIleValGluHis-36
 46-AspIleValLysHisPheGluProLeuGlyLys-56
 118-ArgAlaGlyArgValPro-123

-549-

149-IleGlyArgThrMetGln-154
 198-GluArgTyrValArgArgValTyrGlyTyrGlyThrPro-210
 212-ProValSerPheAspGlyCysArgThrValGlyArgPro-224
 242-SerGlnPheGluArgIleAlaArgProGly-251

Antigenic Index - Jameson-Wolf

13-GlyLysAsnAlaLeu-17
 43-AlaAspGlyAspIle-47
 52-GluProLeuGlyLysHisGln-58
 81-ValAspGlyGluThrGlnIle-87
 99-AlaGlyIleGlyLysAsnAlaVal-106
 113-ValAlaAspAspLeuArgAlaGlyArgValProAsnGlyAsn-126
 135-GlnSerArgValAlaAsp-140
 153-MetGlnIleAspAlaAspArgIleIle-161
 168-AsnGlnGlyAlaArgGlySerPhe-175
 178-IleAsnThrGlyIleHis-183
 188-HisThrGlyThrGlyAsnGlyGlnValAlaGluArgTyrValArg-202
 213-ValSerPheAspGlyCysArgThrValGlyArgProPheAsnArgAsnArgPheValAsp-232
 240-AlaGlySerGlnPheGluArgIleAlaArgProGlyAlaGlyLysCysGly-256

Hydrophilic Regions - Hopp-Woods

43-AlaAspGlyAspIle-47
 52-GluProLeuGlyLys-56
 81-ValAspGlyGluThrGlnIle-87
 113-ValAlaAspAspLeuArgAlaGlyArgValProAsn-124
 136-SerArgValAlaAsp-140
 153-MetGlnIleAspAlaAspArgIleIle-161
 195-GlnValAlaGluArgTyrValArg-202
 216-AspGlyCysArgThrValGly-222
 243-GlnPheGluArgIleAlaArgProGlyAlaGly-253

a639-1

AMPHI Regions - AMPHI

95-TyrLysAsnAsnArg-99
 137-LeuLysValPheAspAsnIle-143
 157-ValAsnTyrSerAspIleHisAspAsnIleIleAsnLysAla-170
 269-AlaProValSerArg-273
 290-GlnPheProAlaValLeuProGly-297
 322-AspGlyLeuLeuLysLysValGlu-329

Antigenic Index - Jameson-Wolf

13-GluGluThrAlaPro-17
 23-HisAsnAsnIleLeuAspAsnSer-30
 41-AlaMetValArgGluAsnLysIleValGly-50
 52-AlaThrLeuArgValAsnGluArgGlyAsnGly-62
 75-GlyAsnAspIleSerLysGlyArgAspGlyIlePheSerAsnThrSerThrHisAsnThrTyrLysAsnAsnA
 rgPheSerAsp-102
 111-TyrThrAsnAspSerGluIleSerGly-119
 121-IleSerValGlyAsnAsn-126
 135-GluArgLeuLysVal-139
 145-ValGlySerArgAspGlnGlyIle-152
 160-SerAspIleHisAspAsnIleIleAsnLysAlaGlyLys-172
 179-AlaAsnTyrAspLysLeuSerAlaAsnHis-188
 203-GluGlyThrSerLeuHisAspAsnSerPheIleAsnAsnGluSerGlnValLysTyrVal-222
 228-AspTrpSerGluGlyGlyHisGlyAsnTyrTrpSerAspAsnSerAla-243
 246-LeuAsnGlyAspGlyPheGlyAspSerAlaTyrArgProAsnGlyIleIle-262

-550-

297-GlyGlyValValAspSerLysProLeuMetLysProTyrAlaProLysIleGlnThr-315
 318-GlnAlaMetLysAspGlyLeuLeuLysLysValGluThrArgGlnLeuGluTrpGlyArgAlaGluAsnGly
 SerLeuAsn-344

Hydrophilic Regions - Hopp-Woods

41-AlaMetValArgGluAsnLysIleValGly-50
 52-AlaThrLeuArgValAsnGluArgGlyAsn-61
 77-AspIleSerLysGlyArgAspGlyIle-85
 95-TyrLysAsnAsnArgPheSerAsp-102
 113-AsnAspSerGlulleSerGly-119
 135-GluArgLeuLysVal-139
 146-GlySerArgAspGlnGly-151
 180-AsnTyrAspLysIleSer-185
 299-ValValAspSerLysProLeuMet-306
 318-GlnAlaMetLysAspGlyLeuLeuLysLysValGluThrArgGlnLeuGluTrpGlyArgAlaGluAsnGly
 Ser-342
a640

AMPHI Regions - AMPHI

6-SerIleLeuLysSerIleGlyIle-13
 22-SerIleLysArgMetSer-27
 47-LeuProAlaTyrAlaGluArgLeuProAspPheLeuAlaLysIleGlnPro-63
 72-ArgTyrSerLysPro-76
 109-SerLysProIleAspThrLeuMetAla-117
 127-AlaLysLeuValAspHis-132

Antigenic Index - Jameson-Wolf

24-LysArgMetSerAlaPheArgAlaArgIle-33
 50-TyrAlaGluArgLeuProAspPheLeuAlaLysIleGlnProSerGluIleValProGlyAlaAspArgTyrS
 erLysProGluGlyLysProMetVal-82
 85-ValTyrLysGlyAspGluGlnLeu-92
 101-AlaValAsnThrArgGlyTyrSerSerLysProIleAsp-113
 118-LeuAlaLysAspGlyThr-123
 128-LysLeuValAspHisHisGlu-134

Hydrophilic Regions - Hopp-Woods

24-LysArgMetSerAlaPheArgAlaArgIle-33
 50-TyrAlaGluArgLeuPro-55
 68-ProGlyAlaAspArgTyrSerLysProGluGlyLysProMetVal-82
 85-ValTyrLysGlyAspGluGlnLeu-92
 118-LeuAlaLysAspGlyThr-123
 128-LysLeuValAspHisHisGlu-134
a642
AMPHI Regions - AMPHI
 6-CysProLeuSerAlaIleSerAlaVal-14
 116-IleLysHisIleValArgAlaPhe-123
 138-GlyValSerAlaPheLysThrLeuArgAlaGlnGluPheLeuGlnHisLeuArgGlyGlyVal-158
 161-PheArgGlyGluGly-165
 167-AspAspValArgLeu-171
 186-AlaAspValAlaValLysAsnLeuGlyAsnLeuMetAlaAlaProAsp-201
 220-ValPheLysGlyGluPheHisAsnAlaValArgHisAlaAspGlnLeuGln-236
 270-ValAspGlyValThrAspGlyAla-277
 296-GlnValAspAspPheGlyGluPheAlaValPhe-306
 325-PheArgGlyValAsp-329
 378-AlaGluLeuLeuGlnTrpLeuGlnHisGlnArgAlaPheAspAlaGlyThr-394

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Antigenic Index - Jameson-Wolf

1-AlaCysArgArgIleCysPro-7
 22-ValGlnGlnGluGlyCysGly-28
 34-LeuTyrGluAspLysGluSerGlyAspAspPheAlaAspLysAspPheLeuGln-51
 73-ValAlaGlyAspGlyGlyLysAlaGly-81
 103-PheGlyGlyGlyAlaAspLysLeu-110
 123-PheLysAsnArgGluGlyAlaAspValAspSerAspIleAla-136
 143-LysThrLeuArgAla-147
 161-PheArgGlyGluGlyPheAspAspValArgLeu-171
 175-MetGlyAspGlyCysAsnGlyArgAsnGlyMet-185
 208-AspGluSerAspValValAla-214
 230-ArgHisAlaAspGlnLeuGlnAlaAlaAlaAspLysAspValLeuGluArgAlaGlnThrGly-250
 259-HisGlyGlyCysArg-263
 265-PheGlyIleAspAlaValAspGlyValThrAspGly-276
 290-CysPheGlyAspGluGlnGlnValAspAspPheGly-301
 309-PheGlyGlyAsnGluGluGluValAlaLeu-318
 328-ValAspValAsnGly-332
 344-PheSerGlyAsnArgArgAlaGlyGly-352
 388-ArgAlaPheAspAlaGlyThrGlnArgAsnGly-398
 401-ValMetProArgAsnPro-406

Hydrophilic Regions - Hopp-Woods

1-AlaCysArgArgIleCys-6
 34-LeuTyrGluAspLysGluSerGlyAspAspPheAlaAspLysAspPheLeu-50
 76-AspGlyGlyLysAla-80
 106-GlyAlaAspLysLeu-110
 123-PheLysAsnArgGluGlyAlaAspValAspSerAspIle-135
 143-LysThrLeuArgAla-147
 164-GluGlyPheAspAspValArgLeu-171
 178-GlyCysAsnGlyArgAsnGlyMet-185
 208-AspGluSerAspValValAla-214
 230-ArgHisAlaAspGlnLeuGlnAlaAlaAlaAspLysAspValLeuGluArgAlaGlnThr-249
 269-AlaValAspGlyValThrAspGly-276
 290-CysPheGlyAspGluGlnGlnValAspAspPheGly-301
 311-GlyAsnGluGluGluValAlaLeu-318
 346-GlyAsnArgArgAlaGly-351
 393-GlyThrGlnArgAsnGly-398
a644

AMPHI Regions - AMPHI

25-CysGlyArgArgPheAspArgPro-32
 55-MetAspThrAlaAlaPheLeuLysHisIleGluSerAlaPheArgArgIlePheAlaAspGlyIleAspLeuM
 etArgTyrLeu-82
 111-GlnPheGluIleGlnGluValLeuArgIleAlaGly-122
 141-GlnProLeuGlnGluPheGlyAsp-148
 181-ArgGluMetGlnSerTyrTyrGluTyrThrAsp-191
 202-TyrTrpGlnGlyAsn-206
 224-LeuAlaLysValIleAspLeuLeu-231
 276-AlaGlyLeuArgAlaPheGlnAsn-283
 304-LeuGluAsnLeuGluArgTyrValArgAsn-313
 333-GluIleLeuTyrArgTyrValCysHis-341
 343-ValSerProValAlaProValAlaHis-351
 356-AlaAsnIleValLysThrLeuAla-363
 372-GlnMetLeuGlnLys-376
 399-PheThrIlePheGluGlyProAsn-406
 408-MetLeuTyrAlaGluIleTyrAspGlnPheValArgAla-420

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439-AspArgLeuGlnThr-443
 456-LeuProGluAspIleArgSerPhe-463
 481-GlyLysIleIleAlaArgLeu-487

Antigenic Index - Jameson-Wolf
 1-MetProSerGluArgSerAlaAspCysCysPro-11
 16-VallYsPheArgLysSerThrLeuAsnCysGlyArgArgPheAspArgProProIleAsnGlyAsnArgGlnA
 rgLysProMetIleHisThrGluProSerAlaGlnProSerThrMetAsp-56
 64-IleGluSerAlaPhe-68
 71-IlePheAlaAspGlyIleAsp-77
 82-LeuProGluAspLysTrpLeu-88
 99-PheLeuAspLysLysTyrGlyGlyArgLysGlySerGlnPheGluIle-114
 132-XxxXxxXxxGluGly-136
 145-GluPheGlyAspGluAlaGlnIle-152
 159-ValPheLysGluGlyGlyLeu-167
 170-ThrGluProGluThrSerGly-176
 178-AlaIleAlaArgGluMetGlnSerTyrTyrGluTyrThrAspGlyGlnThr-194
 202-TyrTrpGlnGlyAsnSerGlnSerAspPhe-211
 216-AlaLysGluArgLysAsnGlyLysLeuAlaLys-226
 235-LysThrTyrIleArg-239
 241-GluThrLeuIleSerGluGlyLeuArg-249
 254-AlaValAsnArgIleAspAlaGluMet-262
 270-LeuSerGlnSerAspAlaAlaGly-277
 306-AsnLeuGluArgTyrValArgAsnAspIleArgPheValAspTyrGluArgArgGluIleArgArgArgHis
 GlnVal-331
 381-LysGlyPheGluArgGlyHisThrAlaGlyAsn-391
 403-GluGlyProAsnAspMetLeu-409
 420-AlaThrAlaGluGluLysGluAlaGlyMetLysLeuAspLysAsnGlnThrLeuLeuAspArgLeuGlnThr
 AspAlaArgPhe-447
 449-AlaValAlaArgAspTyrThrLeuProGluAspIleArgSerPheLeu-464
 493-AlaGluHisGluAspThrAla-499
 505-AspIleArgLysAspIleLeuAspCysArgTyrCysGly-517

Hydrophilic Regions - Hopp-Woods
 1-MetProSerGluArgSerAlaAspCys-9
 17-LysPheArgLysSerThrLeuAsnCysGlyArgArgPheAspArgProProIleAsnGlyAsnArgGlnArgL
 ysProMetIle-44
 64-IleGluSerAlaPhe-68
 82-LeuProGluAspLysTrpLeu-88
 100-LeuAspLysLysTyrGlyGlyArgLysGlySerGln-111
 145-GluPheGlyAspGluAlaGlnIle-152
 160-PhelLysGlyGluGlyGly-165
 170-ThrGluProGluThrSerGly-176
 178-AlaIleAlaArgGluMetGlnSer-185
 216-AlaLysGluArgLysAsnGlyLysLeuAlaLys-226
 254-AlaValAsnArgIleAspAlaGluMet-262
 271-SerGlnSerAspAlaAlaGly-277
 306-AsnLeuGluArgTyrValArgAsnAspIleArgPheValAspTyrGluArgArgGluIleArgArgArgHis
 GlnVal-331
 381-LysGlyPheGluArgGlyHisThr-388
 420-AlaThrAlaGluGluLysGluAlaGlyMetLysLeuAspLysAsnGlnThrLeuLeuAspArgLeuGlnThr
 AspAlaArgPhe-447
 458-GluAspIleArgSerPheLeu-464
 493-AlaGluHisGluAspThrAla-499
 505-AspIleArgLysAspIleLeuAsp-512

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a645

AMPHI Regions - AMPHI

21-AsnThrLeuAsnArgCysCysLys-28
 87-ArgThrLeuProSerLeuAsnGlyLeuThrLys-97
 149-ThrProLysArgCysSerSerSerIle-157
 163-PheLeuAsnPheMetSerSerSerCysThrSerLeu-173
 210-SerAlaLysArgSer-214
 249-SerValLeuProLysPro-254

Antigenic Index - Jameson-Wolf

18-GluGlnSerAsnThrLeuAsnArgCysCysLysSerArgMetThrCysSerSerSerArgSerArgSerCysProCys-44
 47-ProMetArgAlaSerGlySerArgValSerSerArgSerArgMet-61
 68-SerLeuCysArgLysAsnThrCysProProArgLeuSerSerArgAsnThrAlaSerArgThrLeuProSer-91
 99-LeuThrAlaArgArgArgLeuGly-106
 110-IleSerGluLysSerArgSerProSerSer-119
 137-ThrLeuAlaArgArgArgLeuSerCysSerPheArgThrProLysArgCysSerSer-155
 184-SerIlaMetProSer-188
 198-LeuLysArgGluArgLeuAla-204
 207-ThrGlyLysSerAlaLysArgSerAlaLys-216
 221-CysSerThrArgSerValValGlyAla-229
 242-AsnAlaAlaArgArgAlaThr-248
 250-ValLeuProLysProThrSerProHisThrArgArgSerIle-263

Hydrophilic Regions - Hopp-Woods

19-GlnSerAsnThrLeu-23
 25-ArgCysCysLysSerArgMetThrCysSerSerSerArgSerArgSerCysPro-43
 48-MetArgAlaSerGlySerArgValSerSerArgSerArgMet-61
 69-LeuCysArgLysAsnThrCysProProArgLeuSerSerArgAsnThrAlaSerArgThr-88
 99-LeuThrAlaArgArgArgLeuGly-106
 110-IleSerGluLysSerArgSerProSer-118
 137-ThrLeuAlaArgArgArgLeuSerCys-145
 148-ArgThrProLysArgCysSer-154
 198-LeuLysArgGluArgLeuAla-204
 209-LysSerAlaLysArgSerAlaLys-216
 242-AsnAlaAlaArgArgAlaThr-248
 254-ProThrSerProHisThrArgArgSerIle-263

a647

AMPHI Regions - AMPHI

38-GlyLysValCysArgCysPheGluGlnVal-47
 69-ThrValPheArgGlnIleIleArgIleValAspHisAla-81

Antigenic Index - Jameson-Wolf

26-GlyLeuValLysGluArgAlaArg-33
 39-LysValCysArgCysPhe-44
 54-GlyThrValGlyGlnThrGluArgGlyAla-63
 79-AspHisAlaAspThrGluArgThrAlaAlaHisSerGlyGlyThrArgGly-95

Hydrophilic Regions - Hopp-Woods

26-GlyLeuValLysGluArgAlaArg-33
 40-ValCysArgCysPhe-44
 56-ValGlyGlnThrGluArgGlyAla-63
 79-AspHisAlaAspThrGluArgThrAlaAla-88

a648

-554-

AMPHI Regions - AMPHI

7-ArgIleGluArgAlaValArg-13
 15-AlaValIleAspValLeuAsnValAsp-23
 44-AlaLeuAlaAspIleArgValLeu-51
 94-AlaValAspLeuHisAlaValIleLysLeuThrAspThrVal-107
 127-GlnGlyValGluGlnGly-132
 152-PheLysGluGlyAsn-156
 182-AlaArgThrLeuGlyAsnValPheHis-190
 194-GlySerGlyValAspGlyIleGlnAlaValValAlaPheAspGlnTyrAla-210

Antigenic Index - Jameson-Wolf

1-MetAsnArgArgAsnAlaArgIleGluArgAlaValArg-13
 23-AspAlaProGlySerGlyThrLeuLeuHisGlnArgGlyLysGlnValGlySerArgAsnAspAlaLeuAla-46
 65-GlyLysLysArgPheValGlnSerArgAsnLeuValGlyArgLysGlnArgAsn-82
 125-MetProGlnGlyValGluGlnGlyCysArg-134
 142-ArgThrGlyPheAspCysArgLeuLysHisPheLysGluGlyAsnAla-157
 172-SerAlaAspThrSerGlyIleAspAlaAspAlaArgThr-184
 191-AsnArgAlaGlySerGlyValAspGly-199

Hydrophilic Regions - Hopp-Woods

1-MetAsnArgArgAsnAlaArgIleGluArgAlaValArg-13
 33-GlnArgGlyLysGlnValGlySerArgAsnAspAlaLeuAla-46
 65-GlyLysLysArgPheValGln-71
 74-AsnLeuValGlyArgLysGlnArgAsn-82
 127-GlnGlyValGluGlnGlyCysArg-134
 143-ThrGlyPheAspCysArgLeuLysHisPheLysGluGlyAsnAla-157
 172-SerAlaAspThrSerGlyIleAspAlaAspAlaArgThr-184
a649

AMPHI Regions - AMPHI

6-LeuSerAlaIleLeuGlyLeuVal-13
 27-ArgAspThrLysHisIleArgLysAlaAsn-36
 57-SerGlnGlyAsnVal-61
 63-GluLeuArgGluAsnLys-68
 71-ArgLysAlaPheArgSerLeu-77

Antigenic Index - Jameson-Wolf

20-GlyThrSerGluProAlaHisArgAspThrLysHisIleArgLysAlaAsnLys-37
 40-LeuHisProGluCysArgLysTyrLeuGluArgArgAlaAla-53
 56-ArgSerGlnGlyAsnValGlnGluLeuArgGluAsnLysLysAlaArgLysAlaPheArgSerLeuProTyrLy
 ysGluGlnLysThrGlnCys-86
 92-AlaPheAspAspPheAspGlySerArgPheArgArg-103

Hydrophilic Regions - Hopp-Woods

20-GlyThrSerGluProAlaHisArgAspThrLysHisIleArgLysAlaAsnLys-37
 42-ProGluCysArgLysTyrLeuGluArgArgAlaAla-53
 59-GlyAsnValGlnGluLeuArgGluAsnLysLysAlaArgLysAlaPheArg-75
 78-ProTyrLysGluGlnLysThrGlnCys-86
 92-AlaPheAspAspPheAspGlySerArgPheArgArg-103
a650

AMPHI Regions - AMPHI

15-SerValCysProGly-19
 57-LeuTrpSerGluLeuArgGln-63

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72-ProGluLeuValArgArgHisGlu-79
 89-PheAsnArgValIleAsn-94
 137-SerGlyLeuTrpGln-141
 173-AsnTyrLeuGlnTyrLeuTyrGlyLeuPheGlyAspTrpPro-186
 198-AsnValGlyArgAlaIleAsnArgAlaArg-207
 218-LeuArgMetProAsnGluThr-224
 269-GluAlaIleAlaArgLeuAlaGlyIleThrGlnSer-280
 314-SerAsnTyrLeuAsnAlaIleProAsp-322
 341-IleSerThrAlaThrGlyMet-347
 349-IleAlaAspIleLysArgLeuAsnAsnLeu-358
 376-LysThrLeuGlnThrAlaSerGlu-383
 433-ValArgThrXxxThr-437

Antigenic Index - Jameson-Wolf

1-MetSerLysLeuLys-5
 24-GlnAsnThrSerSerHis-29
 38-LeuAsnSerSerIleLeuAspLeuProProThrLysGlnTyrPhe-52
 59-SerGluLeuArgGlnGlyPheArgMetGlyGluValAsnProGluLeuValArgArgHisGluSerLysPheI
 le-83
 92-ValIleAsnArgSerArgProTyr-99
 105-AsnGluValLysLysArgAsnMetProAla-114
 128-ThrLysAlaLysSerHisValGlyAlaSerGly-138
 145-AlaThrGlyArgHisTyrGlyLeuGluLysThrProValTyrAspGlyArgHisAspIle-164
 192-TyrAsnTrpGlyGluGlyAsnValGlyArgAlaIleAsnArgAlaArgAlaGlnGlyLeuGluProThrTyr
 GluAsnLeuArgMetProGluThrArgAsnTyrVal-228
 247-AsnIleSerAspIleAspAsnLysProTyr-256
 259-AlaValGluProaspArgProLeuAspAsnGluAlaIleAla-272
 294-PheIleProLysSerLysArgLysLeu-302
 318-AsnAlaAlaProAspSer-323
 332-ProAlaAlaLysThrSerLeuSerAspIleSerThr-343
 350-AlaAspIleLysArgLeuAsnAsnLeuAsnGly-360
 370-LeuValAlaLysAsnGlyLysThrLeuGlnThrAlaSer-382
 388-IleAspIleAspAsnThrProAsnThrTyrArgSerAsnMetProAlaGlyThr-405
 411-AlaArgIleArgProAlaAla-417
 428-LeuProGlnLysThrValArgThrXxxThrArgSerProCysProTyrCys-444
 446-ThrCysProCysAspSerAlaThrSerAsnArgLysThrAspArgHisAlaVal-465

Hydrophilic Regions - Hopp-Woods

1-MetSerLysLeuLys-5
 61-LeuArgGlnGlyPheArgMetGlyGluValAsnProGluLeuValArgArgHisGluSerLysPhe-82
 92-ValIleAsnArgSerPro-98
 105-AsnGluValLysLysArgAsnMetProAla-114
 128-ThrLysAlaLysSerHisVal-134
 150-TyrGlyLeuGluLysThrProValTyrAspGlyArgHisAspIle-164
 202-AlaIleAsnArgAlaArgAlaGlnGlyLeu-211
 213-ProThrTyrGluAsnLeuArgMetProAsnGluThrArgAsnTyrVal-228
 249-SerAspIleAspAsn-253
 260-ValGluProAspArgProLeuAspAsnGluAlaIleAla-272
 296-ProLysSerLysArgLysLeu-302
 334-AlaLysThrSerLeu-338
 350-AlaAspIleLysArgLeuAsn-356
 373-LysAsnGlyLysThrLeuGlnThrAlaSer-382
 389-AspIleAspAsnThrProAsnThrTyr-397
 411-AlaArgIleArgPro-415
 431-LysThrValArgThrXxxThrArgSer-439

-556-

447-CysProCysAspSerArgSerAlaThrSerAsnArgLysThrAspArgHisAlaVal-465
a652-1
AMPHI Regions - AMPHI
 6-AspIlePheAlaArg-10
 52-ArgAspGlyAspLys-56
 62-LysGlyValLeuLysAlaValGluHisValAsnAsnGlnIleAlaGlnAla-78
 130-LeuTyrArgTyrLeuGlyGlyAlaGlyPro-39
 149-VallleAsnGlyGly-153
 173-LysSerPheArgGluAlaLeuArgCys-181
 184-GluIlePheHisAlaLeuLys-191
 266-AlaGluPheAlaGluTyrLeuGluGlyLeuValAsn-277
 323-AlaGluGlyIleGluLysGlyVal-330
 338-ValAsnGlnIleGlyThrLeuSerGluThrLeuLysAlaValAspLeuAlaLys-355
 377-AspLeuAlaValAla-381
 391-SerLeuSerArgSerAspArgMetAlaLysTyrAsnGlnLeuLeuArgIleGluGluLeuAlaGluAlaAla
 Asp
 Tyr-417

Antigenic Index - Jameson-Wolf

11-GluIleLeuAspSerArgGlyAsnProThrValGlu-22
 36-AlaValProSerGlyAlaSerThrGlyGlnLysGluAlaLeuGluLeuArgAspGlyAspLysSerArgTyrS
 erGlyLysGlyValIleLysAlaValGluHisValAsn-72
 83-AspAlaAsnGluGlnSerTyr-89
 97-LeuAspGlyThrGluAsnLysGlyAsnLeuGly-107
 121-AlaAlaAlaGluAspSerGlyLeuPro-129
 135-GlyGlyAlaGlyProMet-140
 151-AsnGlyGluHisAlaAsnAsnSerAsn-161
 173-LysSerPheArgGluAlaLeuArgCysGlyAla-183
 190-LysLysLeuCysAspSerLysGlyPheProThrThrValGlyAspGluGlyGlyPhe-208
 211-AsnLeuAsnSerHisLysGluAlaLeu-219
 243-CysAlaSerSerGluPheTyrLysAspGlyLysTyrHisLeuGluAlaGluGlyArgSerTyrThrAsn-26
 5
 283-SerIleGluAspGlyMetAspGluAsnAspTrpGluGly-295
 299-LeuThrGluLysLeuGlyGlyLys-306
 309-LeuValGlyAspAspLeu-314
 318-AsnProLysIleLeuAlaGluGlyIleGluLysGlyVal-330
 352-AspLeuAlaLysArgAsnArgTyrAla-360
 363-MetSerHisArgSerGlyGluThrGluAspSerThrIle-375
 388-LysThrGlySerLeuSerArgSerAspArgMetAlaLys-400
 405-LeuArgIleGluGluGluLeuAlaGluAlaAlaAspTyrProSerLys-420

Hydrophilic Regions - Hopp-Woods

11-GluIleLeuAspSerArgGlyAsnProThrValGlu-22
 43-ThrGlyGlnLysGluAlaLeuGluLeuArgAspGlyAspLysSerArgTyrSerGly-61
 63-GlyValLeuLysAlaValGlu-69
 97-LeuAspGlyThrGluAsnLysGlyAsnLeu-106
 121-AlaAlaAlaGluAspSerGly-127
 153-GlyGluHisAlaAsn-157
 173-LysSerPheArgGluAlaLeuArgCysGlyAla-183
 190-LysLysLeuCysAspSerLysGly-197
 202-ValGlyAspGluGlyGlyPhe-208
 213-AsnSerHisLysGluAlaLeu-219
 247-GluPheTyrLysAspGlyLysTyrHisLeuGluAlaGluGlyArgSerTyrThr-264
 283-SerIleGluAspGlyMetAspGluAsnAspTrpGluGly-295

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299-LeuThrGluLysLeuGlyGly-305
 321-IleLeuAlaLysGlyIleGluLysGlyVal-330
 352-AspLeuAlaLysArgAsnArgTyr-359
 364-SerHisArgSerGlyGluThrGluAspSerThrIle-375
 391-SerLeuSerArgSerAspArgMetAlaLys-400
 405-LeuArgIleGluGluGluLeuAlaAlaAspTyrProSer-419

a653

AMPHI Regions - AMPHI

6-MetArgMetProGluValThrLysGlyPheSerGlySer-18
 60-ThrMetArgLysProArgLeuThr-67
 75-AlaLeuIlePheThrCysPheAla-82
 96-ThrAlaLeuAlaAlaIleThrCysIle-104
 111-LeuGlyLysMetGluGluPheAsn-118

Antigenic Index - Jameson-Wolf

4-GluProMetArgMetProGluValThrLysGlyPheSerGlySer-18
 45-GlyCysArgSerThrArgLysThr-52
 56-ValArgProGluThrMetArgLysProArgLeuThrAsnSerSerAla-71
 86-AsnSerGlyCysAsnAla-91
 103-CysIleSerGlyProProCysArgLeuGlyLysMetGluGlu-116
 125-SerArgHisLysIleThrProProArgGlyProArgArgVal-138
 145-ThrLysSerGlnAsnGlyThrGly-152
 154-GlyTyrSerProProAlaThrArgProAla-163

Hydrophilic Regions - Hopp-Woods

4-GluProMetArgMetProGluValThrLys-13
 47-ArgSerThrArgLysThr-52
 57-ArgProGluThrMetArgLysProArgLeuThrAsn-68
 107-ProProCysArgLeuGlyLysMetGluGlu-116
 126-ArgHisLysIleThrProProArgGlyProArg-136
 158-ProAlaThrArgProAla-163

a656

AMPHI Regions - AMPHI

14-MetaAlaArgThrLeuGlyAlaProGlu-22
 42-ArgArgProSerThr-46
 92-LeuAlaSerLeuAsnLysSerCys-99

Antigenic Index - Jameson-Wolf

6-GlySerThrSerSer-10
 19-GlyAlaProGluSerValProAlaGlyLysValAlaAla-31
 40-SerPheArgArgProSerThrLeuGlu-48
 74-ArgProThrSerLeuArgProLysSerIleAsn-84
 94-SerLeuAsnLysSerCysSerLeuAlaArgSerSerAlaGlyValLeuProArgArgArgValProAla-116
 120-ThrMetThrSerSerArgSerArgArgThrArgIleSerGlyGluGluProThrMetTrpLysSerProLys
 Ser-144

Hydrophilic Regions - Hopp-Woods

40-SerPheArgArgProSerThr-46
 76-ThrSerLeuArgProLysSer-82
 99-CysSerLeuAlaArgSerSer-105
 109-LeuProArgArgArgValProAla-116
 121-MetThrSerSerArgSerArgArgThrArgIleSerGlyGluGluProThrMet-138

140-LysSerProLysSer-144
a657

AMPHI Regions - AMPHI
 9-ProAlaMetLeuGly-13
 20-LeuGlyArgMetPheThr-25
 62-ThrAlaLeuGluGluLeuAlaLysCysAlaAla-72
 85-MetArgPheLeuAlaLys-90
 140-PheLeuProGlyIleLeuLysThr-147
 161-LysThrValAspGluLeuLysAla-168
 178-CysValLeuGluLysMetValAsp-185
 203-GlnThrPheAspProAlaGluAsnIle-211
 232-GlnGlnAlaArgGlnMetAlaGlnArgLeuAlaAspGluLeuAsnTyrValGlyValLeu-251
 279-HisThrValAspAlaCysAlaAla-286
 314-AsnIleLeuGlyAsp-318

Antigenic Index - Jameson-Wolf
 1-MetLysAsnIleSerLeu-6
 16-GlyGlyGlyGlnLeuGlyArg-22
 37-ValLeuAspProAsnProAsnAlaPro-45
 57-ProPheAspAsnThrAlaLeuGluAlaLeuAlaLys-69
 75-ThrGluPheGluAsnValAsnAlaAspAla-84
 91-HisThrAsnValSerProSerGlyAsp-99
 106-AsnArgIleGlnGluLysAlaTrpIle-114
 128-CysLysAlaGluAspIleThrGluGluSerIle-138
 150-LeuGlyTyrAspGlyLysGlyGlnIleArgValLysThrValAspGluLeuLysAlaAlaPheAlaGluHis
 ArgGlyValAspCysValLeu-180
 182-LysMetValAspLeuArgGlyGluIle-190
 196-ArgLeuAsnAsnAspAsnValGlnThrPheAspProAlaGluAsnIleHisGluAsnGly-215
 230-IleGlnGlnGlnAlaArgGlnMetAla-238
 269-IleAlaProArgProHisAsnSerGlyHisHis-279
 288-GlnPheGlnGlnVal-293
 300-ProProAlaAspThrLysLeuLeuSer-308
 319-ValTrpGlnGluAspGlyGlyGluProAspTrp-329
 331-ProLeuGlnSerArgProAspAlaHis-339
 344-GlyLysLysThrAlaHisLysGlyArgLysMetGly-355
 360-LeuSerThrAspSerAspThrAlaPheGlnGluAlaLysLysLeuHis-375

Hydrophilic Regions - Hopp-Woods
 62-ThrAlaLeuGluGluLeuAlaLys-69
 75-ThrGluPheGluAsnValAsn-81
 128-CysLysAlaGluAspIleThrGluGluSerIle-138

152-TyrAspGlyLysGlyGlnIleArgValLysThrValAspGluLeuLysAlaAlaPheAlaGluHisArgGly
 ValAspCysValLeu-180
 182-LysMetValAspLeuArgGlyGluIle-190
 197-LeuAsnAsnAspAsn-201
 206-AspProAlaGluAsnIleHis-212
 230-IleGlnGlnGlnAlaArgGlnMetAla-238
 269-IleAlaProArgProHisAsn-275
 301-ProAlaAspThrLysLeu-306
 320-TrpGlnGluAspGlyGlyGluProAsp-328
 334-SerArgProAspAla-338
 344-GlyLysLysThrAlaHisLysGlyArgLysMetGly-355
 362-ThrAspSerAspThrAlaPheGlnGluAlaLysLysLeuHis-375

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a658

AMPHI Regions - AMPHI

28-ArgGlnTyrAlaAspValValGlnPheIleGlyGlnThrLeuArgHisLeuSerArgLeuLeuLeuAsn-50
 57-TrpAspAspGlyVal-61
 68-ValAsnValPheGlyArgIleGluSer-76
 94-GlnValHisHisPhePheGlnAsnAlaIleHisAla-105
 128-IleAlaGlnCysSerGlyPheGlnAspAlaGlyGln-139
 143-AlaphePheSerAspValPheGly-150

Antigenic Index - Jameson-Wolf

6-ValArgThrArgArgAspPheValAspAspGlnPheMetArgValAlaAspAsnLysHisPhe-26
 55-SerGlyTrpAspAspGlyValGlyGluAspThrVal-66
 72-GlyArgIleGluSer-76
 84-ThrAlaTyrAspAsnGlyAsn-90
 108-PheGlyLysArgGlyPhe-113
 131-CysSerGlyPheGlnAspAlaGlyGlnLys-140
 155-LeuIleArgArgGlyLeuGln-161
 174-ValLeuArgAspGlyAsnAla-180
 189-MetPheGlyGluIleGlyThrHisArgIleGly-198
 202-PheGluLeuGlyArgAsnSerArgThr-210
 216-GlnSerGlyLeuValValLysArgArgThrGln-226
 230-GlyLysPheArgCysArgArg
 IleArgVal-239
 251-PheGlySerAsnSerLysHisSerAla-259

Hydrophilic Regions - Hopp-Woods

6-ValArgThrArgArgAspPheValAsp-14
 16-GlnPheMetArgValAlaAspAsnLysHisPhe-26
 56-GlyTrpAspAspGlyValGlyGluAspThrVal-66
 72-GlyArgIleGluSer-76
 135-GlnAspAlaGlyGln-139
 174-ValLeuArgAspGlyAsnAla-180
 190-PheGlyGluLysThrHisArgIleGly-198
 203-GluLeuGlyArgAsnSerArg-209
 220-ValValLysArgArgThrGln-226
 230-GlyLysPheArgCysArgArgIleArgVal-239
 253-SerAsnSerLysHisSerAla-259

a661

AMPHI Regions - AMPHI

19-GlyIleThrAspLysProPheArgArgLeuCysArgAspPheGlyAlaGly-35
 37-AlaValCysGluMetLeu-42
 75-AspProGlnGlnMetAlaAspAlaAla-83
 122-AlaAlaIleLeuGluAlaValValLys-130
 152-ProValIleAlaIysIleAlaGlu-159
 222-TyrAspArgAlaArgArg-227
 235-ProArgPheGluThrLeuArgArgThrArgCys-245
 248-AlaCysLeuGluPheGlyArgMetTyrArgHisTyrPheGluPro-262
 267-AlaArgValLeuArgArgHis-273

Antigenic Index - Jameson-Wolf

20-IleThrAspLysProPheArgArgLeuCysArgAspPheGlyAlaGly-35

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42-LeuThrSerAspProThrLeuArgAsnThrArgLysThrLeuHisArgSerAspPheAlaAspGluGly-Gly-
55
72-AlaGlySerAspProGlnGlnMetAlaAspAlaAlaArg-84
97-AsnMetGlyCysProAlaLysLysValCys-106
143-GlyTrpHisAspAspHisGlnAsnLeu-151
157-IleAlaGluAspCysGly-162
168-XxxProArgThrHisAla-173
176-AsnValGlnArgArgSerGlyLeuArgProAspCysArgAsnGlnMetProSerGluHisProGlyLeuGly
GlnArgArgHisTyrLeuAlaAlaLysSerProSerArgProGlnThrAsnArgArgArgHisTyrAspArgA
laArgArgAlaArgGln-230
235-ProArgPheGluThrLeuArgArgThrArgCysPhe-246
256-TyrArgHisTyrPheGluProHisProSerHisAlaArgValLeuArgArgHisArgArgCysAlaHisArg
ThrGlnThrHisArgLeuValHisArgArgAsnAlaArgArgArgThrAspThrSer-298

Hydrophilic Regions - Hopp-Woods

20-IleThrAspLysProPheArgArgLeuCysArgAspPhe-32
46-ProThrLeuArgAsnThrArgLysThrLeuHisArgSerAspPheAlaAspGluGly-Gly-65
73-GlySerAspProGlnGlnMetAlaAspAlaAlaArg-84
100-CysProAlaLysLysValCys-106
157-IleAlaGluAspCysGly-162
176-AsnValGlnArgArgSerGlyLeuArgProAspCysArgAsnGlnMetProSerGluHisProGlyLeuGly
GlnArgArgHisTyrLeu-205
208-LysSerProSerArgProGlnThrAsnArgArgArgArgHisTyrAspArgAlaArgArgAlaArgGln-23
0
238-GluThrLeuArgArgThrArgCys-245
268-ArgValLeuArgArgHisArgArgCysAlaHisArgThrGlnThr-282
285-LeuValHisArgArgAsnAlaArgArgArgThrAspThrSer-298
a663

AMPHI Regions - AMPHI

19-ProPheAlaLeuLeuHisLysLeuAlaAspLeuThrGlyLeuLeuAlaTyr-35
66-LysGlnHisPheLysHisMetAlaLysLeu-75
87-AlaGlyArgLeuLysSerLeuValArg-95
168-GluGlyLeuArgAlaLeuValLysGlnPheArgLys-179
209-ThrIleThrGlyLeuSerArgIleAlaAlaLeuAlaAsn-221
243-ProAlaTrpGluSer-247
258-GlnArgMetAsnArgPheIleGluGluArgValArgGluHis-271

Antigenic Index - Jameson-Wolf

38-ValLysProArgArgArgIleGlyGlu-46
56-TrpAspGlyLysLysArgLysThrValLeu-65
87-AlaGlyArgLeuLysSer-92
94-ValArgTyrArgAsnLysHisTyrLeuAsp-103
105-AlaLeuAlaAlaGlyGluLys-111
139-TyrSerHisGlnLysAsnLysIleLeuAsp-148
150-GlnIleLeuLysGlyArgAsnArgTyr-158
166-ArgThrGluGlyLeuArgAlaLeu-173
175-LysGlnPheArgLysSerSerAla-182
188-ProAspGlnAspPheGlyArgAsnAspSerVal-198
229-ProValArgGluAlaAspAsnThr-236
243-ProAlaTrpGluSerPheProSerGluAspAlaGlnAlaAspAlaGlnArgMetAsnArgPheIleGluGlu
ArgValArgGluHisProGlu-273
280-LysArgPheLysThrArgProGluGlySerProAspPheTyr-293

Hydrophilic Regions - Hopp-Woods

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39-LysProArgArgArgIleGlyGlu-46
 56-TrpAspGlyLysLysArgLysThrValLeu-65
 88-GlyArgLeuLysSer-92
 94-ValArgTyrArgAsn-98
 105-AlaLeuAlaAlaGlyGluLys-111
 142-GlnLysAsnLysIleLeuAsp-148
 150-GlnIleLeuLysGlyArgAsnArgTyr-158
 166-ArgThrGluGlyLeuArgAlaLeu-173
 176-GlnPheArgLysSerSer-181
 190-GlnAspPheGlyArgAsnAspSerVal-198
 229-ProValArgGluAlaAspAsn-235
 248-PheProSerGluAspAlaGlnAlaAspAlaGlnArgMetAsnArgPheIleGluGluArgValArgGluHis
 ProGlu-273
 280-LysArgPheLysThrArgProGluGlySerPro-290

a664

AMPHI Regions - AMPHI
 28-AlaHisArgMetCys-32
 47-AlaAspValPheAspThrAlaHisGlyAlaAlaGly-58
 88-AlaArgProValValGluIle-94

Antigenic Index - Jameson-Wolf
 25-SerGlyGlyAlaHisArgMetCysGlyArg-34
 48-AspValPheAspThrAlaHisGly-55
 73-PheLeuGlnArgLysLeuGluPro-80
 108-IleGlyGlyGlyThrAlaValGlyLysAspGluLeuGlyValLysAspValGln-125
 137-AlaHisGlyAspAspHisGluAsn-144
 164-AlaIleProArgGlnSerArgProTrp-172
 175-ProLeuArgTrpCysLysThrArgPhe-183

Hydrophilic Regions - Hopp-Woods
 74-LeuGlnArgLysLeuGluPro-80
 113-AlaValGlyLysAspGluLeuGlyValLysAspValGln-125
 137-AlaHisGlyAspAspHisGluAsn-144
 166-ProArgGlnSerArg-170
a665-1

AMPHI Regions - AMPHI
 6-HisTyrLeuLysAspTyrGln-12
 105-LeuTyrAlaSerAla-109
 111-AsnLeuPheThrGlnCysGluProGluGlyPheArgLysIleThr-125
 132-AspValMetSerLysPheThrThrThr-140
 167-ArgHisTrpValLysTrpGluAspProPhe-176
 225-SerLeuLysAsnAlaMetLys-231
 286-GlyIleGluSerValVal-291
 294-GluTyrPheHisAsnTrpThr-300
 307-ArgAspTrpPheGlnLeuSerLeu-314
 329-AspArgAlaSerArgAlaValArgArgIleGluAsnIleArgLeuLeuArgGln-346
 360-ValArgProAlaArgTyrGluGluMetAsnAsnPheTyrThr-373
 380-GlyAlaGluValValArgMetTyrHisThrLeu-390
 396-PheGlnLysGlyMetLys-401
 520-ThrGluAlaValValProSerLeuLeuArgGlyPheSerAlaPro-534
 555-AspAlaPheThrArgTrpGluAlaAlaGln-564
 575-LeuAlaAlaLeuSerAspGlyValGluLeuProLysHisGluLysLeuLeuAlaAlaValGlu-595

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603-LeuAspAsnAlaPheLysAlaLeu-610
 622-AspGlyAlaGluAsnIleAspProLeu-630
 648-LeuProLysTrpHisGluLeuAsnArg-656
 G674-lyTrpArgThrLeuArgAsnValCysArgAla-684
 696-ThrValAlaGluLysTyrAlaGluMetAlaGlnAsnMet-708
 712-TrpGlyIleLeuSer-716
 728-ArgLeuLeuAlaGlnPheAlaAspLysPheSer-738
 758-AspThrLeuGlnGlnValGlnThrAla-766
 782-SerLeuIleGlySerPheSerArgAsnVal-791
 822-ArgLeuValGlnAlaPheAsnLeuCysAsnLysLeu-833

Antigenic Index - Jameson-Wolf

8-LeuLysAspTyrGlnThrProAlaTyr-16
 26-AspIleAsnGluPro-30
 34-ValLysSerArgLeuThrValGluProLysArgValGlyGlu-47
 49-LeuValLeuAspGlySerAla-55
 79-AlaAspValProSerGluArgPheThrVal-88
 90-ValGluThrGluLeuProAlaGluAsnLysSerLeu-102
 114-ThrGlnCysGluProGluGlyPheArgLys-123
 128-IleAspArgProAspValMetSer-135
 142-ValIalaAspLysLysArgTyrPro-149
 154-AsnGlyAsnIysIleAspGlyGlyGluTyrSerAspGlyArgHisTrpValLysTrpGluAspProPheAlaLysProSer-180
 191-AlaValThrGluAspTyr-196
 200-MetSerGlyArgAsnValLysIle-207
 211-ThrThrGluIalaAspLysProLysVal-219
 230-MetLysTrpAspGluThrArgPhe-237
 255-AsnMetGlyAlaMetGluAsnLysGlyLeu-264
 275-AspSerArgThrIalaThrAspThrAspPheGluGlyIleGlu-288
 295-TyrPheHisAsnTrpThrGlyAsnArgValThrCysArgAspTrp-309
 313-SerLeuLysGluGly-317
 322-ArgAspGlnGluPheSerGlyAspArgAlaSerArgAlaValArgArgIleGluAsn-340
 347-HisGlnPheProGluAspAlaGlyProThrAlaHisProValArgProAlaArgTyrGluGluMetAsn-36
 9
 376-ValTyrGluLysGlyAlaGluVal-383
 394-GluGlyPheGlnLysGlyMet-400
 404-PheGlnArgHisAspGlyGlnAlaValAlaValThrCysAspAspPheArg-418
 437-SerGlnAlaGlyThrPro-442
 446-AlaGlnGlyArgLeuLysAsnAsnVal-454
 459-IleLysGlnThrValProProThrProAspMetAlaAspLysGlnPro-474
 485-AsnCysAsnGlyGluAlaVal-491
 494-AspTyrGlnGlyLysArgAlaThrGlu-502
 509-GluAlaGluGlnThrPhe-514
 537-LeuAsnTyrProTyrSerAspAspAspLeu-546
 552-HisAspSerAspAla-556
 578-LeuSerAspGlyValGluLeuProLysHisGluLysLeu-590
 594-ValGluLysValIleSerAspAspLeuLeu-603
 614-ValProSerGluAlaGluLeuTrpAspGlyAlaGluAsnIleAspProLeuArg-631
 633-HisGlnAlaArgGluAlaLeu-639
 652-HisGluLeuAsnArgGlnAlaAlaLysGlnGluAsnGlnSerTyrGluTyrSerProGluAlaAlaGly-67
 4
 677-ThrLeuArgAsnValCys-682
 689-AlaAspProAlaHis-693
 696-ThrValAlaGluLysTyrAlaGlu-703
 719-AsnGlyAsnGluSerAspThrArgAsnArgLeu-729

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733-PheAlaAspLysPheSerAspAspAlaLeuVal-743
 752-GlySerSerArgArgSerAspThrLeuGln-761
 768-GlnHisProLysPheSerLeuGluAsnProAsnLysAlaArgSer-782
 785-GlySerSerArgArgAsnValPro-792
 795-HisAlaGluAspGlySerGlyTyrArgPheIleAla-806
 808-LysValIleGluIleAspArgPheAsnProGlnVal-819
 831-AsnLysLeuGluProHisArgLysAsnLeuVal-841
 844-AlaLeuGlnArgIleArgAlaGlnGluGlyLeuSerLysAspValGlyGluIleVal-862

Hydrophilic Regions - Hopp-Woods

34-ValLysSerArgLeuThrValGluProLysArgValGlyGlu-47
 81-ValProSerGluArgPheThrVal-88
 90-ValGluThrGluIleLeuProAlaGluAsnLysSer-101
 116-CysGluProGluGlyPheArg-122
 129-AspArgProAspValMetSer-135
 142-ValAlaAspLysLysArgTyr-148
 154-AsnGlyAsnLysIleAspGlyGlyGluTyrSerAspGlyArgHis-168
 170-ValLysTrpGluAspProPheAla-177
 201-SerGlyArgAsnValLys-206
 213-GluAlaAspLysProLysVal-219
 230-MetLysTrpAspGluThrArgPhe-237
 258-AlaMetGluAsnLysGly-263
 275-AspSerArgThrAlaThrAspThrAspPheGluGlyIleGlu-288
 313-SerLeuLysGluGly-317
 322-ArgAspGlnPheSerGlyAspArgAlaSerArgAlaValArgArgIleGluAsn-340
 348-GlnPheProGluAspAlaGlyPro-355
 361-ArgProAlaArgTyrGluGluMetAsn-369
 376-ValTyrGluLysGlyAlaGluVal-383
 394-GluGlyPheGlnLysGlyMet-400
 406-ArgHisAspGlyGln-410
 413-ThrCysAspAspPheArg-418
 446-AlaGlnGlyArgLeuLysAsnAsnVal-454
 467-ProAspMetAlaAspLysGlnPro-474
 495-TyrGlnGlyLysArgAlaThrGlu-502
 541-TyrSerAspAspLeu-546
 552-HisAspSerAspAla-556
 580-AspGlyValGluLeuProLysHisGluLysLeu-590
 594-ValLysValIleSer-599
 616-SerGluAlaGluLeu-620
 622-AspGlyAlaGluAsnIleAspPro-629
 633-HisGlnAlaArgGluAlaLeu-639
 652-HisGluLeuAsnArgGlnAlaAlaLysGlnGluAsnGlnSer-665
 689-AlaAspProAlaHis-693
 696-ThrValAlaGluLysTyrAlaGlu-703
 719-AsnGlyAsnGluSerAspThrArgAsnArgLeu-729
 733-PheAlaAspLysPheSerAsp-739
 753-SerSerArgArgSerAspThr-759
 776-AsnProAsnLysAlaArgSer-782
 795-HisAlaGluAspGlySerGly-801
 808-LysValIleGluIleAspArgPheAsn-816
 831-AsnLysLeuGluProHisArgLysAsnLeuVal-841
 844-AlaLeuGlnArgIleArgAlaGlnGluGlyLeuSerLysAspValGlyGluIleVal-862
a666

AMPHI Regions - AMPHI

-564-

89-GlyTyrAspIleLeuLysGlnGlyGlySer-98
 162-LeuLysPheMetGluAlaVal-168

Antigenic Index - Jameson-Wolf
 5-AsnHisGlnSerAsnSerGlyGluGlyValLeu-15
 40-AsnGlnGlyLysValAsnThr-46
 54-AlaAspAlaHisThrProGluHisAlaThr-63
 65-LeuThrGluGlnLysGln-70
 92-IleLeuLysGlnGlyGlySerAlaAla-100
 114-GluProGlnSerSerGlyLeuGlyGly-122
 130-AspAsnThrAlaLysThr-135
 137-ThrThrPheAspGlyArgGluThrAlaPro-146
 154-PheLeuAspLysAspGlyGlnPro-161

Hydrophilic Regions - Hopp-Woods
 8-SerAsnSerGlyGlu-12
 40-AsnGlnGlyLysValAsnThr-46
 55-AspAlaHisThrProGluHis-61
 65-LeuThrGluGlnLysGln-70
 96-GlyGlySerAlaAla-100
 139-PheAspGlyArgGluThrAlaPro-146
 154-PheLeuAspLysAspGlyGlnPro-161
a667

AMPHI Regions - AMPHI
 49-IleAlaAspPheLeuGlnProAlaArgValGluArgLeuProHisLeuAlaAla-66
 74-LysThrAlaGlnPhe-78
 115-IleAlaAlaValAlaGluIle-121
 128-IleAlaArgGlyValAspAlaValGlnArg-137
 152-ThrAspGlnLeuArgArgMetPhePheAsnGlnLeuLysPheGlyAspAsnHis-170
 174-ValIleHisLeuAlaAspCysThrAsp-182
 201-LysMetMetLeuHisLysIleProThrArgLeu-211

Antigenic Index - Jameson-Wolf
 11-IleValSerAspProLeuAsp-17
 27-SerAlaAlaAspGlnThrGluThrGln-35
 56-AlaArgValGluArgLeuPro-62
 71-LeuAlaArgLysThrAlaGln-77
 84-ArgHisIleArgProArgLeuValLysArgGluGlnIle-96
 130-ArgGlyValAspAlaValGln-136
 139-ValMetGlnAsnArgGlnValGlu-146
 151-ProThrAspGlnLeuArg-156
 163-LeuGluLysPheGlyAsp-168
 179-AspCysThrAspMet-183
 188-ProProThrHisAlaAlaArgAsnArgHisAsnLeu-199
 207-IleProThrArgLeu-211
 226-GlyGlnArgGlyArgGlnValIleGlnArgThrAspThrLeu-239
 247-IleGluSerGlnAsnArgGlyHisAspSer-256

Hydrophilic Regions - Hopp-Woods

11-IleValSerAspProLeu-16
 27-SerAlaAlaAspGlnThrGluThrGln-35
 56-AlaArgValGluArgLeuPro-62
 71-LeuAlaArgLysThrAlaGln-77

-565-

84-ArgHisIleArgProArgLeuValLysArgGluGlnIle-96
 130-ArgGlyValAspAlaValGln-136
 164-GluLysPheGlyAsp-168
 191-HisAlaAlaArgAsnArgHisAsnLeu-199
 227-GlnArgGlyArgGlnValIleGlnArgThrAspThr-238
 249-SerGlnAsnArgGlyHisAsp-255
a669

AMPHI Regions - AMPHI
 24-LysLeuHisArgAlaPhe-29
 59-GlnIlePheArgHisValGlnSer-66
 79-LysProProAsnThrAla-84

Antigenic Index - Jameson-Wolf
 1-MetArgArgIleIleLysLysHisGlnProValAsn-12
 33-GlyArgLysArgProHisHisAspArgSerLeuArgArgGlnHisGlyIle-50
 64-ValGlnSerSerAsnArgGlnAsnGlyArgGlnProValCysThrLysProProAsnThrAlaSer-85
 100-AlaAspIleLysArgIleLeu-106

Hydrophilic Regions - Hopp-Woods
 1-MetArgArgIleIleLysLysHisGlnPro-10
 33-GlyArgLysArgProHisHisAspArgSerLeuArgArgGlnHisGly-49
 65-GlnSerSerAsnArgGlnAsnGlyArgGlnProValCysThrLysProProAsn-82
 100-AlaAspIleLysArgIleLeu-106
a670

AMPHI Regions - AMPHI
 10-ArgSerCysPheGly-14
 16-ValLysAsnAlaSerGlyValSer-23
 34-IleThrArgSerAla-38
 77-ValGlySerSerAsnAsnIle-83
 126-PheSerAlaCysSer-130

Antigenic Index - Jameson-Wolf
 4-CysArgAsnCysLeuAlaArgSerCys-12
 18-AsnAlaSerGlyValSerSerSerArgIleCysProLeuSer-31
 33-LysIleThrArgSerAlaThrSerArgAlaAsnProIle-45
 65-AsnThrSerProThrIleSerGlySerSerAlaGluValGlySerSerAsnAsnIleThrArgGlySerIleA
 laLysProArgAlaIleAla-95
 98-CysCysTrpProProGluSerTrpGluGlyLysAla-109
 114-AlaSerProThrArgSerLysSerSer-122
 145-AsnThrValArgCysGly-150

Hydrophilic Regions - Hopp-Woods
 33-LysIleThrArgSerAlaThrSerArgAlaAsn-43
 73-SerSerAlaGluValGlySer-79
 87-SerIleAlaLysProArgAlaIleAla-95
 116-ProThrArgSerLysSer-121
a671

AMPHI Regions - AMPHI
 96-ThrProArgIleAla-100
 119-ArgLeuPheIleArgTyr-124

Antigenic Index - Jameson-Wolf

-566-

11-PheAsnAlaProAsnThrProProLysMetArgLeuAlaLysProLysProThrAlaGluThrAlaProValSerSerGluArg-38
 45-GlnAlaMetThrAsnArgGluMetAsnAspArgAlaAsnAlaAsnArgArgGlyTrpAsnAspAlaLysAlaMetSerAlaLysGlyAlaAlaLysSerLeuAlaLysLysLysAlaThrThr-85
 98-ArgIleAlaAspSerThrMet-104
 110-AlaGluThrArgArgSerAlaThrGlyArgLeu-120
 125-LeuThrGlyAspThr-129

Hydrophilic Regions - Hopp-Woods

16-ThrProProLysMetArgLeuAlaLysProLysProThrAlaGlu-30
 32-AlaProValSerSerGluArg-38
 47-MetThrAsnArgGluMetAsnAspArgAlaAsnAlaAsnArgArgGlyTrpAsnAspAlaLysAlaMetSerAlaLysGlyAlaAlaLysSerLeuAlaLysLysAlaThrThr-85
 110-AlaGluThrArgArgSerAlaThr-117
a672

AMPHI Regions - AMPHI

38-ArgAlaValAspIleLysAlaGlnLys-47
 50-AlaAlaLeuProProPheValSerValVal-59
 67-AlaGlnAsnIleArgArgIleLeuAlaGluValPro-78
 91-AlaPheCysArgGlnPheHisArgProTyr-100
 105-ArgValGlnThrAlaSerAspIleArgAsnAlaAlaAspArgPhe-119
 131-HisProSerGluTyrGly-136
 165-AsnValAspGluAlaIle-170
 173-ThrGlyAlaGluAla-177

Antigenic Index - Jameson-Wolf

1-MetArgLysIleArgThrLysIleCysGlyIleThrThrProGluAspAlaLeu-18
 34-ProGlnSerProArgAlaValAspIleIleLysAlaGlnLys-47
 65-GluSerAlaGlnAsnIleArgArgIleLeuAla-75
 84-PheHisGlyAspGluAspAspAlaPhe-92
 107-GlnThrAlaSerAspIleArgAsnAlaAlaAspArgPheProAspAla-122
 130-TyrHisProSerGluTyrGlyGlyThrGlyHisArgPheAsp-143
 149-GluTyrSerGlyLysPro-154
 159-GlyGlyLeuThrProGluAsnValAspGluAlaIleArg-171
 176-GluAlaValAspValSerGlyGlyValGluAlaSerLysGlyLysAspProAlaLys-195
 202-ThrAlaAsnArgLeuSerArg-208

Hydrophilic Regions - Hopp-Woods

1-MetArgLysIleArgThrLysIle-8
 13-ThrProGluAspAlaLeu-18
 36-SerProArgAlaValAsp-41
 43-IleLysAlaGlnLys-47
 66-SerAlaGlnAsnIleArgArgIleLeuAla-75
 85-HisGlyAspGluAspAspAlaPhe-92
 110-SerAspIleArgAsnAlaAlaAspArgPheProAsp-121
 164-GluAsnValAspGluAlaIleArg-171
 184-ValGluAlaSerLysGlyLysLysAspProAlaLys-195
 204-AsnArgLeuSerArg-208
a673

AMPHI Regions - AMPHI

84-LeuAsnAspArgLeuAsnGlnAsnValThrGluAlaLeuGlyGlyValAspVal-101
 110-ArgPheThrAspAla-114
 117-ValValLeuLysGlnLeuProLys-124

-567-

172-ArgIleAlaAsnLeuLeuGluLeuIleLysProTyrLeu-184

212-LysLeuPheArgTyrLeuGlyGluGlu-220

261-GlyGluArgLeuLysLysIleSerThr-269

275-MetGluLysLeuPhe-279

285-LeuLysValTrpValLysValLys-292

Antigenic Index - Jameson-Wolf

7-LeuAlaGlyGluArgAlaAlaAspGlyTyrArg-17

24-ValGlyArgProAsnValGlyLysSerThr-33

44-SerIleThrSerLysLysAlaGlnThrThrArgAsnArgValThr-58

61-TyrThrAspAspThrAla-66

73-ThrProGlyPheGlnThrAspHisArgAsnAlaLeuAsnAspArgLeuAsnGlnAsnValThrGlu-94

110-ArgPheThrAspAlaAspArgValVal-118

121-GlnLeuProLysHisThr-126

134-LysIleAspLysAspLysAlaLysAspArgTyrAla-145

153-ValArgAlaGluPhe-157

180-IleLysProTyrLeuProGluSerVal-188

190-MetTyrProAspMetValThrAspLysSerAlaArg-202

208-IleValArgGluLysLeuPhe-214

217-LeuGlyGluGluLeuPro-222

227-ValGluValGluGlnPheGluGluAspGlyLeuAsn-239

247-ValAspLysGluSerGlnLys-253

258-GlyLysGlyGluArgLeuLysLysIleSerThrGluAlaArgLeuAspMetGluLysLeuPheAsp-28

0

291-ValLysSerGlyTrpAlaAspAspIleArgPheLeuArg-303

Hydrophilic Regions - Hopp-Woods

7-LeuAlaGlyGluArgAlaAlaAspGlyTyrArg-17

45-IleThrSerLysLysAlaGlnThrThrArgAsnArgVal-57

61-TyrThrAspAspThrAla-66

78-ThrAspHisArgAsnAlaLeuAsnAspArgLeuAsn-89

110-ArgPheThrAspAlaAspArgValVal-118

134-LysIleAspLysAspLysAlaLysAspArgTyrAla-145

153-ValArgAlaGluPhe-157

194-AspMetValThrAspLysSerAlaArg-202

208-IleValArgGluLysLeuPhe-214

217-LeuGlyGluGluLeuPro-222

227-ValGluValGluGlnPheGluGluAspGlyLeuAsn-239

247-ValAspLysGluSerGlnLys-253

259-LysClyGlyGluArgLeuLysLysIleSerThrGluAlaArgLeuAspMetGluLysLeuPheAsp-280

293-SerClyTrpAlaAspAspIleArgPheLeuArg-303

a674

AMPHI Regions - AMPHI

16-ValTyrGlnSerLeuIle-21

24-ThrAlaAlaProGluIleAlaLysAsnIleArgGluMetProAspPheAlaLys-41

58-AlaAlaGluTyrIleArgGlnIleArgPro-67

86-ThrAlaCysHisGluLeuSerAlaMetProGluThr-97

107-IleGluValThrLysThrPheGlyGlyThrAspGlyHisLysPheValAsnGlyIleLeuAspLysLeuAla-130

Antigenic Index - Jameson-Wolf

1-MetLysThrAlaArgArgSerArgGluLeuAla-12

28-GluIleAlaLysAsnIleArgGluMetProAspPheAlaLysAlaAspGluGluLeuPhe-47

54-ThrGlnThrAsnAla-58

-568-

63-ArgGlnIleArgProLeuLeuAspArgAspGluLysAspLeuAsnProIleGluArg-81
 93-AlaMetProGluThrProTyr-99
 105-GluAlaIleGluValThrLysThrPheGlyGlyThrAspGlyHisLysPhe-121
 129-LeuAlaAlaGlnIleArgProAspGluProLysArgArg-141

Hydrophilic Regions - Hopp-Woods

1-MetLysThrAlaArgArgArgSerArgGluLeuAla-12
 28-GluIleAlaLysAsnIleArgGluMetProAspPheAlaLysAlaAspGluGluLeuPhe-47
 63-ArgGlnIleArgProLeuLeuAspArgAspGluLysAspLeuAsnProIleGluArg-81
 105-GluAlaIleGluVal-109
 133-IleArgProAspGluProLysArgArg-141
a675

AMPHI Regions - AMPHI

21-ArgPheThrAsnGluIleGlySerGluMetLeuLysValCysCysArgThrLeuGlnGluLeuGly-42
 74-AlaLeuIleAlaIle-78
 123-GlnAlaIleGluArgIleGluGluLysAlaSerAsp-134
 141-GluCysAlaAsnLeuValAsnLeuLeuLeuGlu-151

Antigenic Index - Jameson-Wolf

6-ProAsnLeuAspGlyLysHisLeuArg-14
 26-IleGlySerGluMetLeu-31
 42-GlyValAlaAspGluAsnIle-48
 68-SerSerGluLysPheAsp-73
 82IleArgGlyGluThrTyr-87
 92-ValSerAsnGluSerGlyAlaGlyVal-100
 118-ThrGluAsnAspAlaGlnAlaIleGluArgIleGluGluLysAlaSerAspAlaAlaLysValAlaVal-14
 0
 152-GluGlnPheGluAspGluGlu-158

Hydrophilic Regions - Hopp-Woods

8-LeuAspGlyLysHisLeuArg-14
 26-IleGlySerGluMetLeu-31
 42-GlyValAlaAspGluAsnIle-48
 68-SerSerGluLysPheAsp-73
 82-IleArgGlyGluThrTyr-87
 92-ValSerAsnGluSerGlyAlaGly-99
 118-ThrGluAsnAspAlaGlnAlaIleGluArgIleGluGluLysAlaSerAspAlaAlaLysValAlaVal-14
 0
 152-GluGlnPheGluAspGluGlu-158
a677

AMPHI Regions - AMPHI

20-AlaArgLeuCysArgPheArgArg-27
 45-LeuThrProPheArgArgValAsnHisPheValAlaPheThrArgPheAsnGln-62
 78-IleAspPheIleAspAlaAsp-84
 86-PheAspGlyLeuLeuAla-91
 105-HisLeuValGlyArgPhe-110
 154-CysArgProValAspAspLeuAspAsp-162
 165-AlaPhePheIleAsnGlnLeuIleLysLeuValPheGlnCys-178

Antigenic Index - Jameson-Wolf

23-CysArgPheArgArgHisSerArgSerValAsp-33
 35-AspValPheAspArgLysAspPheAsn-43
 59-ArgPheAsnGlnThrThrSerGlnArgArgAsnProArgAsnPheVal-74

81-IleAspAlaAspAspPheAspGly-88
 96-GlnGlnThrAspGlyArgAlaGluLysHisLeu-106
 114-GlyIleAsnAspAspGlyGlyPhe-121
 124-LeuGlyGlnGluThrAspAlaAlaVal-132
 155-ArgProValAspAspLeuAspAspPheGly-164
 180-ProSerGlyGlyArgAsn-185

Hydrophilic Regions - Hopp-Woods
 23-CysArgPheArgArgHisSerArgSerValAsp-33
 35-AspValPheAspArgLysAspPhe-42
 64-ThrSerGlnArgArgAsnProArg-71
 81-IleAspAlaAspAspPheAsp-87
 96-GlnGlnThrAspGlyArgAlaGluLysHisLeu-106
 115-IleAsnAspAspGlyGly-120
 125-GlyGlnGluThrAspAlaAlaVal-132
 155-ArgProValAspAspLeuAspAsp-162
a678

AMPHI Regions - AMPHI
 10-LeuValSerAlaIleIle-15
 24-MetArgGlyValIle-28
 47-PheAlaAlaProPhe-51
 79-LeuIleGlnLysIleLeuArgSerLeuLeuThrGlyAla-91
 102-ArgIleLeuGlyGlyValPheGlyAlaLeuLysGlyIleLeu-115
 130-ProAspThrGluGlu-134

Antigenic Index - Jameson-Wolf
 125-SerLysThrAspLeuProAspThrGluGluTrpArgGlnSerTyrThr-140
 154-HisSerGlyGlyThrAlaGluThrProGluAspAsp-165

Hydrophilic Regions - Hopp-Woods
 125-SerLysThrAspLeuProAspThrGluGluTrpArgGln-137
 157-GlyThrAlaGluThrProGluAspAsp-165
a681

AMPHI Regions - AMPHI
 12-PheSerGluGluAlaLysPheIleSerAlaMet-22
 102-LeuProValGlyAsp-106
 122-ArgLeuGlyGluGlnCys-127
 137-IleGlyGluAlaAspAspAlaGluValValArgValValGlyValPheValGly-154
 202-LysCysValHisCysGly-207
 210-XxxGlyGlyLysLeuAlaAspPheThrThrIle-220
 234-CysAlaProPheAlaAlaLeuArgCysPheCysIlePheGlyValTrpLysArgIleArgAlaValPheCys
 GlyArg-259

Antigenic Index - Jameson-Wolf
 11-AsnPheSerGluGluAlaLysPhe-18
 39-AlaThrProAsnSerTrpArgValArgGlnGln-49
 59-LeuValLysArgAlaCys-64
 67-ProMetArgArgCysLeuProSerArgLeu-76
 89-GlyGlyPheGlyMetProSerGluGlySerVal-99
 103-ProValGlyAspGlyLeuGlu-109
 120-AlaPheArgLeuGlyGluGlnCysGlyGlyPhe-130
 136-AspIleGlyGluAlaAspAspAlaGluVal-145
 157-AlaAlaGluGluThrPro-162

-570-

167-PheLysAsnGlyGly-171
 173-AlaValGluGluAlaAspGly-179
 185-AspGlyValGlyGlyAspAlaAlaValGluCysArgGlyLysCysLeuCys-201
 207-GlyGsnThrXxxGlyGlyLysLeuAlaAsp-216
 224-SerAlaAspGlyGlyGly-229
 256-PheCysGlyArgArg-260

Hydrophilic Regions - Hopp-Woods

11-AsnPheSerGluGluAlaLysPhe-18
 44-TrpArgValArgGln-48
 59-LeuValLysArgAlaCys-64
 67-ProMetArgArgCysLeuPro-73
 95-SerGluGlySerVal-99
 120-AlaPheArgLeuGlyGluGln-126
 136-AspIleGlyGluAlaAspAspAlaGluVal-145
 157-AlaAlaGluGluThrPro-162
 173-AlaValGluGluAlaAspGly-179
 191-AlaAlaValGluCysArgGlyLysCysLeu-200
 210-XxxGlyGlyLysLeuAlaAsp-216
 256-PheCysGlyArgArg-260

a682

AMPHI Regions - AMPHI

33-ArgLeuArgLysCysGlyArgIleLeuSerGlyIleCysGluProPhe-48

Antigenic Index - Jameson-Wolf

9-SerTyrGlyLysTrpArgLysAsnTrpAspIle-19
 30-SerSerThrArgLeuArgLysCysGlyArg-39
 95-ArgPheProThrAspArgProIleLeu-103
 112-IleSerProArgThrGlyPheArgTyrProThrArgSerLeuProLysSerLysAlaTyrGly-133

Hydrophilic Regions - Hopp-Woods

12-LysTrpArgLysAsnTrpAsp-18
 32-ThrArgLeuArgLysCysGlyArg-39
 97-ProThrAspArgProIleLeu-103
 124-SerLeuProLysSerLysLysAlaTyrGly-133

a683

AMPHI Regions - AMPHI

26-ThrProAspLysSerAlaArgTrpGluAsnIleGlyThrIleSerAsn-41
 101-SerSerLeuGlnLeuPhe-106
 124-ArgProMetSerIleLeuSerGly-131

Antigenic Index - Jameson-Wolf

24-CysSerThrProAspLysSerAlaArgTrpGluAsn-35
 37-GlyThrIleSerAsnGly-42
 48-IleAsnLysAspSerValArgLysAsnGlyAsn-58
 63-XxxAspLysLysValValThrAsnLeuLysGlnGluArgPheAla-77
 93-CysAsnAsnLysThrTyrArgLeu-100
 106-PheAspThrLysAsnThrGluIleSerThr-115
 119-ThrAlaSerSerLeuArgPro-125
 131-GlyThrLeuThrGluLysGlnTyrGlu-139
 141-ValCysGlyLysLysLeu-146

Hydrophilic Regions - Hopp-Woods

-571-

25-SerThrProAspLysSerAlaArgTrpGluAsn-35
 48-IleAsnLysAspSerValArgLysAsnGly-57
 63-XxxAspLysLysValValThr-69
 71-LeuLysGlnGluArgPheAla-77
 107-AspThrLysAsnThrGluIleSer-114
 133-LeuThrGluLysGlnTyrGlu-139
 141-ValCysGlyLysLysLeu-146
a684

AMPHI Regions - AMPHI
 13-AlaAlaCysGlyThrValGln-19
 47-LeuAlaGluProLeu-51
 73-TrpAlaAspThrLeuAspAspMetLeuGluAlaAlaLeuSerAsnAlaPheAsnArgLeuAspSerThr-95
 110-TrpThrValTyrIleAspAlaPheGlnGlySerTyr-121
 154-AlaMetThrAlaAlaLeuGluGlnGlyLeuLysGlnAlaAlaGlnGlnMetVal-171

Antigenic Index - Jameson-Wolf
 26-LeuProAspSerArgTyrIleArgProAlaThrGlnGlyGluThrAlaValGluValArgLeuAlaGluProLeuLysArgGlyLeu-56
 60-ThrAspProTyrArgLeuAsnThrAlaGln-69
 76-ThrLeuAspAspMetLeuGlu-82
 90-AsnArgLeuAspSerThrArg-96
 101-AlaSerArgSerGlySerThrGluLys-109
 117-PheGlnGlySerTyrThrGlyLysThrLeu-126
 133-LeuProAspGlyThrAsnArgProPheHisIleGluThrGluGlnGlyAspGlyTyrAla-153
 161-GlnGlyLeuLysGlnAlaAla-167

Hydrophilic Regions - Hopp-Woods
 27-ProAspSerArgTyrIleArg-33
 35-AlaThrGlnGlyGlyGluThrAlaValGluValArgLeuAlaGluProLeuLysArgGlyGly-55
 76-ThrLeuAspAspMetLeuGlu-82
 90-AsnArgLeuAspSer-94
 102-SerArgSerGlySerThrGluLys-109
 141-PheHisIleGluThrGluGlnGlyAsp-150
 161-GlnGlyLeuLysGlnAlaAla-167
a685

AMPHI Regions - AMPHI
 7-AsnPheAlaPheCysGlyValVal-14
 44-CysAlaValLeuLeu-48
 94-TrpAlaAlaLeuAspThrLeuThrGluLeu-103
 137-TyrGluAlaLeuHisArgTyr-143
 154-GlyAlaGluAlaTyrGluGlnLeuAlaLysAsn-164
 182-GluLysGlnMetGluThrLeuAlaArgIlePheGlyLysGlu-195
 206-AspAlaLeuPheAla-210
 296-AlaValGluValLeuAspAsnAlaLeuVal-305
 336-AlaAlaGluGlnLeuLysGluAlaPhe-344

Antigenic Index - Jameson-Wolf
 20-LeuAsnAsnLysHisSerTyrSerTyrAlaLysGluProHisThrValLysProArgPhe-39
 52-SerProGluProAlaAlaGluLysThrValSer-62
 74-ProThrAlaArgGlyAspAlaValValProLysAsnProGluArgValAla-90
 122-AlaPheAspLysAlaAla-127
 133-PheGluProAspTyrGluAlaLeuHisArgTyrAsn-144
 151-GlyGlyProGlyAlaGluAlaTyrGluGlnLeuAlaLysAsnAlaThr-166

-572-

170-LeuThrValAspAsnGlnIleArgThrSerGlyGluLysGlnMetGluThrLeu-188
 192-PheGlyLysGluAlaArgAlaAlaGluLeuLysAlaGlnIle-205
 211-GlnThrArgGluAlaAlaLysGlyLysGlyArgGlyLeu-223
 227-ValThrGlyAsnLysValSerAlaPheGlyThrGlnSerArgLeu-241
 247-GlyAspIleGlyLeuProValAspGluSerLeuArgAsnGluGlyHisGlyGln-265
 271-TyrIleLysGluLysAsnProAspTrpIle-280
 285-ArgThrAlaAlaIleGlyGlnGluGlyProAla-295
 307-GlyThrAsnAlaTrpLysArgLysGln-315
 328-GlyGlySerArgGlnLeu-333
 338-GluGlnLeuLysGluAlaPheGluLysAlaGluPro-349
 351-AlaAlaGlyLysGlu-355

Hydrophilic Regions - Hopp-Woods

28-TyrAlaLysGluProHisThrValLys-36
 52-SerProGluProAlaAlaGluLysThrValSer-62
 75-ThrAlaArgGlyAspAlaValVal-82
 84-LysAsnProGluArgValAla-90
 122-AlaPheAspLysAlaAla-127
 135-ProAspTyrGluAla-139
 156-GluAlaTyrGluGlnLeuAlaLys-163
 175-GlyAsnIleArgThrSerGlyGluLysGlnMetGluThrLeu-188
 192-PheGlyLysGluAlaArgAlaAlaGluLeuLysAlaGlnIle-205
 211-GlnThrArgGluAlaAlaLysGlyLysGlyArgGly-222
 253-ProValAspGluSerLeuArgAsnGluGlyHisGly-264
 271-TyrIleLysGluLysAsnPro-277
 290-GlyGlnGluGlyProAla-295
 309-AsnAlaTrpLysArgLysGln-315
 338-GluGlnLeuLysGluAlaPheGluLysAlaGluPro-349
 351-AlaAlaGlyLysGlu-355
a686

AMPHI Regions - AMPHI

10-AspValPheAspAspIleCysSerAlaValGluSerPheGlyGlyIleAlaArgSerValGlnLeu-31
 50-ThrThrGlyIleValGluThrValAspLysProLeu-61
 70-ValGluAlaAspIle-74
 86-IleProArgAlaPheGlySerGlyIleAlaAlaAlaLeu-98

Antigenic Index - Jameson-Wolf

1-TerTerAsnPheSerCysArgAlaAspAspValPheAsp-13
 46-LeuArgGlnHisThrThrGlyIle-53
 55-GluThrValAspLysProLeuSerGlyAla-64
 70-ValGluAlaAspIle-74
 115-AspAlaValLysAlaGluSerValAsnGlyThrThrGly-127

Hydrophilic Regions - Hopp-Woods

6-CysArgAlaAspAspValPheAsp-13
 55-GluThrValAspLysProLeuSer-62
 70-ValGluAlaAspIle-74
 115-AspAlaValLysAlaGluSerValAsn-123
a687

AMPHI Regions - AMPHI

11-AlaAlaLeuPheAlaLeu-16
 64-LysValGluValLeuGluPhePheGlyTyrPheCysPro-76
 78-CysAlaHisLeuGluProValLeuSerLysHisAlaLysSerPhe-92

-573-

112-LeuAlaArgLeuAlaAlaAla-118
 135-PheAspAlaMetVal-139
 148-ProGluValLeuLysLysTrpLeu-155
 176-GlnAlaArgAlaAspLysMetGlnGluLeuThrGluThrPhe-189

Antigenic Index - Jameson-Wolf

1-MetLysSerLysHis-5
 19-CysAspSerLysValGlnThrSerValProAlaAspSerAlaPro-33
 43-GlyLeuValGluGlyGlnAsnTyr-50
 56-ProIleProGlnGlnGlnAlaGlyLysValGluVal-67
 87-LysHisAlaLysSerPheLysAspAspMetTyrLeu-98
 122-AlaAlaAlaAspSerLysAspValAlaAsn-131
 141-GlnLysIleLysLeuGlnGluProGluValLeuLys-152
 159-ThrAlaPheAspGlyLysLysVal-166
 171-GluSerProGluSerGlnAlaArgAlaAspLysMetGlnGluLeuThrGlu-187
 189-PheGlnIleAspGlyThrPro-195
 199-ValGlyGlyLysTyrLysValGluPheAlaAsp-209
 211-GluSerGlyMetAsnThr-216
 220-LeuAlaAspLysValArgGluGluGlnLysAlaAlaHis-232

Hydrophilic Regions - Hopp-Woods

1-MetLysSerLysHis-5
 19-CysAspSerLysValGlnThr-25
 27-ValProAlaAspSerAlaPro-33
 61-GlnAlaGlyLysValGluVal-67
 87-LysHisAlaLysSerPheLysAspAspMetTyrLeu-98
 122-AlaAlaAlaAspSerLysAspValAla-130
 141-GlnLysIleLysLeuGlnGluProGluValLeuLys-152
 159-ThrAlaPheAspGlyLysLysVal-166
 171-GluSerProGluSerGlnAlaArgAlaAspLysMetGlnGluLeuThrGlu-187
 201-GlyLysTyrLysValGluPheAlaAsp-209
 220-LeuAlaAspLysValArgGluGluGlnLysAlaAlaHis-232
a688

AMPHI Regions - AMPHI

23-LeuSerAlaLeuLeuGlyLeu-29
 120-GlyAsnAlaLeuGlnAsnAlaAla-127

Antigenic Index - Jameson-Wolf

4-TyrProSerArgPheAlaGln-10
 13-IleSerValAsnLys-17
 47-IleIleGlnGlyAsnGluLeuGluProArgAla-57
 61-LeuArgProGlyMetThrLysAspGln-69
 82-AlaPheHisThrAspArgTrpAspTyr-90
 93-AsnThrSerArgAsnGlyIleIleLysAspArgSerAsn-105
 116-ValArgThrGluGlyAsnAla-122
 125-AsnAlaAlaGluAlaLeuArgValLysGlnAsnAlaAspLysGln-139

Hydrophilic Regions - Hopp-Woods

51-AsnGluLeuGluProArgAla-57
 64-GlyMetThrLysAspGln-69
 98-GlyIleIleLysAspArgSerAsn-105
 116-ValArgThrGluGlyAsnAla-122
 125-AsnAlaAlaGluAlaLeuArgValLysGlnAsnAlaAspLysGln-139
a689

-574-

AMPHI Regions - AMPHI

55-TyrProGluMetSerGluLysLeuMet-63
 65-ValLeuMetAlaMetLeuValThrLeu-73
 82-LeuProAlaIleProGluMetAlaGln-90
 111-AlaPheGlyGlnValValGlyGly-118
 123-IleLysGlyArgLys-127
 154-LeuAsnLeuArgValValGlnAlaPheGlyAlaGly-165
 188-PheAlaLeuIleGlyIleIleLeu-195
 203-ProMetValGlyAlaLeuLeuGlnGlyLeuGlyGlyTrpGlnAlaIlePheVal-220
 230-LeuGlyLeuValGlnTyrPhe-236
 245-LysIleGlyArgAspVal-250
 257-ArgPheLysArgValLeu-262
 277-SerPheGlySerMetPheAla-283
 314-MetMetPhePheAsnArgIleThr-321
 344-AlaAlaAsnLeuSerGlnLeuAlaAlaValLeuPhe-355
 400-ValLeuGlyValPheGlnSerLeuIleGly-409

Antigenic Index - Jameson-Wolf

36-PheArgArgArgAlaVal-41
 45-IleGlyArgGluPheMetProSer-52
 57-GluMetSerGluLysLeu-62
 95-AspValHisArgIleGluGln-101
 119-SerValSerAspIleLysGlyArgLysProVal-129
 174-MetValArgAspTyrTyrSerGlyArgLysAlaAla-185
 238-ProLysProAlaValGlyGlyLysIleGlyArgAspValPhe-251
 257-ArgPheLysArgValLeuLysThrArgAla-266
 325-LeuLysThrGlyValHis-330
 390-PheLysGluGluGlyGlySer-396
 448-ArgAlaTrpLysGluAsnGlyGlnSerGluTyrLeu-459

Hydrophilic Regions - Hopp-Woods

36-PheArgArgArgAlaVal-41
 45-IleGlyArgGluPheMet-50
 57-GluMetSerGluLysLeu-62
 95-AspValHisArgIleGluGln-101
 119-SerValSerAspIleLysGlyArgLysProVal-129
 178-TyrTyrSerGlyArgLysAlaAla-185
 245-LysIleGlyArgAspVal-250
 257-ArgPheLysArgValLeuLysThrArgAla-266
 390-PheLysGluGluGlyGlySer-396
 448-ArgAlaTrpLysGluAsnGlyGln-455
 a690

AMPHI Regions - AMPHI

36-AlaSerSerThrAlaSerAla-42
 57-SerAlaProAspAsnValLysGlnAlaGlu-66
 68-ValProProSerAsnCysThrAspLeuHisProAlaThrGlyIleAspAspLeuMetGlnGlnIleAlaGluH
 isIle-93
 116-GlyTyrAspAsnIleGlnArgLeu-123
 151-ArgThrIleSerArgGlnAlaGlnAspAla-160
 189-ProLysArgThrArgTyrPhe-195
 213-GlyAsnPheGlnTyrIleGlyGlnLeuProGlyTyrLeuLys-226

Antigenic Index - Jameson-Wolf

-575-

1-MetLysAsnLysThrSer-6
 21-SerProSerLysGluAspLysThrLysGluAsnGlyAla-33
 43-AlaSerSerSerAlaProGlnThrAspLeu-52
 57-SerAlaProAspAsnValLysGlnAlaGluSerValProProSerAsnCysThrAspLeuHisProAlaThrGlyIleAspAspLeuMet-86
 91-GluHisIleAspSerAspCys-97
 104-HisGluLeuGluThrArgPhe-110
 112-LeuProGlyGlyTyrAspAsnIleGln-121
 126-ProAspIleArgProGluAspProAspTyrHisGln-137
 144-GluAspIleuArgTyrGlyLysArgThrIleSerArgGlnAlaGln-158
 160-AlaLeuMetGluGlnGluArgArgLeuArgGlu-170
 177-GlnGlySerGlnGluThrArgGlyGlnGlyGluGluProLysArgThrArgTyr-194
 198-SerAlaThrProIlaTyrSerSerArgHisAsnAsnGlyLeuGlyAsn-214
 228-HisGlyGluMetLeuGluAsnGlnSerLeu-237
 239-ArgLeuSerAsnArgGluArgAsnProAspLysProPheLeu-252
 255-HisPheAspGluAsnGlyLysIleThr-263
 267-ValTyrGluLysAsnIleTyrPheAsnProAsnLeuGlyArgArg-281

Hydrophilic Regions - Hopp-Woods

1-MetLysAsnLysThr-5
 21-SerProSerLysGluAspLysThrLysGluAsnGlyAla-33
 46-SerAlaProGlnThrAspLeu-52
 57-SerAlaProAspAsnValLysGlnAlaGluSerValPro-69
 81-GlyIleAspAspLeuMet-86
 91-GluHisIleAspSer-95
 104-HisGluLeuGluThr-108
 128-IleArgProGluAspProAspTyrHis-136
 144-GluAspIleuArgTyrGlyLysArgThrIleSerArgGlnAlaGln-158
 160-AlaLeuMetGluGlnGluArgArgLeuArgGlu-170
 178-GlySerGlnGluThrArgGlyGlnGlyGluGluProLysArgThrArgTyr-194
 203-TyrSerSerArgHisAsnAsn-209
 228-HisGlyGluMetLeuGlu-233
 240-LeuSerAsnArgGluArgAsnProAspLysProPhe-251
 255-HisPheAspGluAsnGlyLysIleThr-263
a691

AMPHI Regions - AMPHI

11-LysProAlaAlaSer-15
 55-HisAsnGluLeuArgLysIleArgAla-63
 108-ArgTyrLeuSerGly-112

Antigenic Index - Jameson-Wolf

7-CysArgPheAlaLys-11
 36-LeuAsnAspPheGlnProAsnCysAspIleArgArgLeuGlyLeuThrGlnGlyGlnHisAsnGluLeuArgLysIleArgAla-63
 67-MetAlaGlyAspArgAlaArgLeuLysValMetHis-78
 80-GluHisSerArgArgArgSerVal-87
 91-IleSerSerAspValPheAsnArgAsnGluAlaArgAspTyrValGluSerArgTyrLeuSerGlyMetAspPheAlaValAspGluLeuGluIle-122
 131-ThrProGlnGlnGlnGln-136
 140-SerSerCysLeuLys-144

Hydrophilic Regions - Hopp-Woods

43-CysAspIleArgArgLeuGly-49
 54-GlnHisAsnGluLeuArgLysIleArgAla-63

-576-

67-MetAlaGlyAspArgAlaArgLeuLysValMetHis-78
 80-GluHisSerArgArgArgSerVal-87
 95-ValPheAsnArgAsnGluAlaArgAspTyrValGlu-106
 115-PheAlaValAspGluLeuGluIle-122
a692

AMPHI Regions - AMPHI
 6-CysArgCysSerGluSerIleArgArgIleArgArgAsn-18
 77-LeuGlyTyrValPheLysProLeuAlaValPheVal-88
 106-GlnGlyPheGlyGlnLeuHis-112
 132-ThrArgGlnLeuArgGlyPheLys-139
 143-PheAspValPheGlnValPheGlyAsn-151
 170-GlnPheValGluIleHis-175
 177-AspAlaGlyGluValGlyArgValValGlyArgGlyTyrGlyAlaAlaValPheAspPhePheGlnArgPhe
 GlnLeu-202
 205-ValGlnSerGlnArgArgGlyArgHisLeuGluAspPheGlyAsp-219
 254-ValGlyLysLeuAspGlnPheAspGlyVal-263
 275-PheAspHisIleAlaGluValAlaAsp-283

Antigenic Index - Jameson-Wolf
 6-CysArgCysSerGluSerIleArgArgIleArgArgAsnGlyArgGluTrpArgIleLysGlyGlnLysCysAr
 gLeuAsnThrAspThrValGln-37
 89-GlyGlyPheAspGlyArgProValAspIleGlyLysAlaArgPheLeu-104
 120-AlaValAspAspGlyLysIle-126
 131-AlaThrArgGlnLeuArgGlyPheLysLeuAspAspPheAspVal-145
 153-ArgPheGlyCysGlyGlnArgIleAspAla-162
 174-HisHisGlnAspAlaGlyGluValGlyArgValValGlyArgGlyTyr-189
 204-ArgValGlnSerGlnArgArgGlyArgHisLeuGluAspPheGlyAsp-219
 236-GluAspValAspVal-240
 255-GlyLysLeuAspGlnPheAspGly-262
 279-AlaGluValAlaAspGlyArgAlaGluAspAspPhePhePhe-292
 295-AlaValValGlyGlyArgSerGlyCysGlyGlyArg-307
 313-AlaAlaGlyGluAspGluArgGluCysGlyGlyLysGlyPheGluGlu-330

Hydrophilic Regions - Hopp-Woods
 7-ArgCysSerGluSerIleArgArgIleArgArgAsnGlyArgGluTrpArgIleLysGlyGlnLysCysArgLe
 uAsnThr-33
 91-PheAspGlyArgProValAspIleGlyLys-100
 120-AlaValAspAspGlyLysIle-126
 131-AlaThrArgGlnLeuArgGlyPheLysLeuAspAspPheAsp-144
 174-HisHisGlnAspAlaGlyGluValGlyArgValValGly-186
 206-GlnSerGlnArgArgGlyArgHisLeuGluAspPheGlyAsp-219
 236-GluAspValAspVal-240
 255-GlyLysLeuAspGlnPheAsp-261
 279-AlaGluValAlaAspGlyArgAlaGluAspAspPhePhePhe-292
 299-GlyGlyArgSerGlyCysGly-305
 315-GlyGlyGluAspGluArgGluCysGlyGly-324
 326-LysGlyPheGluGlu-330
a694

AMPHI Regions - AMPHI
 82-ArgGlyArgAlaCysArg-87
 116-CysArgHisPheAlaGln-121
 123-ValAlaValGlyArgIleGly-129
 140-PheCysGlnLeuPheAsp-145

156-AspIlePheLeuVal-160
 162-IleAlaAspIleGlyGlu-167
 184-ArgGlyLeuAlaAspIleGlyGluPheValGlyValSerAsp-197
 251-HisGlnArgAlaSerArgIleLys-258
 283-ArgAlaArgArgHisPheArgGlnValPheAsn-293
 311-AspPheValAlaHisIle-316
 340-AlaAlaArgIleGly-344

Antigenic Index - Jameson-Wolf

3-SerAlaSerGlyThrArgGlnLysCysrgLeuLysProVal-16
 23-ProLysHisSerThrProAlaSer-30
 47-GlyGlnAspGluHisAsnAla-53
 66-ProProSerAlaTyrGly-71
 79-HisPheGlyArgGlyArgAlaCysArgTyr-88
 110-ArgIleAspSerAlaArgCysArgHis-118
 127-ArgIleGlyArgThrAspHisAsnHisAsp-136
 144-PheAspGlyGlyLeuProValGlyArgArgIleAla-155
 163-AlaAspIleGlyLeuThrArgValGlnArgGlyAspAspValPhe-177
 180-IleAspArgGluArgGlyLeuAlaAsp-188
 202-HisIleSerAspAspPheAspGlnLysHisPheAlaArgArgLysLeuProHisArgSerPheAspLeu-22
 4
 228-LeuMetProAspHisAspAspPheThr-236
 250-ArgHisGlnArgAlaSerArgIleLysHisAlaGluThrAlaLeu-264
 268-LeuProHisArgLeuArgTyrAla-275
 280-AsnGlnCysArgAlaArgArgHisPhe-288
 291-ValPheAsnLysHisArgThr-297
 316-IleAsnArgArgAlaGluLeu-322
 326-ThrPheAspAsnThrAspCysPro-333
 336-ThrSerAlaGluAlaAlaArgIleGlyLysAspAspGlyPhe-349
 370-TyrGlyGlyArgCysCysProThrProProThrProHisArgArgArg-385

Hydrophilic Regions - Hopp-Woods

5-SerGlyThrArgGlnLysCysArgLeuLysPro-15
 47-GlyGlnAspGluHisAsnAla-53
 81-GlyArgGlyArgAlaCysArg-87
 110-ArgIleAspSerAlaArgCysArgHis-118
 127-ArgIleGlyArgThrAspHisAsnHis-135
 150-ValGlyArgArgIleAla-155
 163-AlaAspIleGlyLeuThrArgValGlnArgGlyAspAsp-175
 180-IleAspArgGluArgGlyLeuAlaAsp-188
 202-HisIleSerAspAspPheAspGlnLysHisPheAlaArgArgLysLeuProHisArgSerPheAspLeu-22
 4
 230-ProAspHisAspAsp-234
 250-ArgHisGlnArgAlaSerArgIleLysHisAlaGluThrAlaLeu-264
 280-AsnGlnCysArgAlaArgArgHisPhe-288
 292-PheAsnLysHisArg-296
 316-IleAsnArgArgAlaGluLeu-322
 327-PheAspAsnThrAsp-331
 338-AlaGluAlaAlaArgIleGlyLysAspAspGly-348
 380-ThrProHisArgArgArg-385
 a695

AMPHI Regions - AMPHI

36-HisProGlnArgPheSerLysProAlaGluArgTyrAlaAspCysProHis-52
 85-CysSerSerProValSerArgAsn-92

119-AspArgLeuAspTyr-123
 129-ValArgLeuSerAsnGluValGlu-136
 144-AlaLeuGluHisAla-148
 158-ValGlnLysLeuAsp-162
 183-ValGluThrAlaGlnAsnLeuTyrAsnGlnAlaLeuLysHisTyrLysSerGly-200
 205-AlaAlaSerLeuLeuLysGlyAla-212
 238-CysGluSerValIleGluIle-244
 248-TyrAlaAsnArgPheLysAspSer-255
 278-AlaArgAlaThrTrpArgSerLeuIleGlnThrTyrProGly-291

Antigenic Index - Jameson-Wolf

5-CysProAlaArgArgHisCysHis-13
 17-PheValGluArgLysGlyAspAlaArgSerGlyPhe-28
 31-AlaAlaGlnArgArgHisProGlnArgPheSerLysProAlaGluArgTyrAlaAspCysProHisHisProA
 1aArgArgArgPheAspProAlaSerGluLysIleMetLysThrLys-71
 87-SerProValSerArgAsnIleGlnAspMetArgLeuGluProGlnAlaGluAlaGlySerSerAspAlaIleP
 roTyr-112
 117-LeuGlnAspArgLeuAspTyr-123
 131-LeuSerAsnGluValGluThrLeuAsnGlyLysValLysAlaLeuGluHisAlaLysThrHisProSerSer
 ArgAlaTyrValGlnLysLeuAspAspArgLysLeuLysGlu-168
 170-TyrLeuAsnThrGluGlyGlySerAla-178
 193-AlaLeuLysHisTyrLysSerGlyArgPhe-202
 210-LysGlyAlaAspGlyGlyAspGlyGlySerIleAlaGln-222
 230-GlnSerArgAlaArgMetGlyAsnCys-238
 244-IleGlyArgTyrAlaAsnArgPheLysAspSerProThrAlaPro-259
 266-GlyGluCysGlnTyr-270
 272-LeuGlnGlnLysAspIleAla-278
 289-TyrProGlySerProAlaAlaLysArgAlaAlaAlaAlaValArgLysArg-305

Hydrophilic Regions - Hopp-Woods

5-CysProAlaArgArgHisCys-12
 17-PheValGluArgLysGlyAspAlaArgSerGlyPhe-28
 31-AlaAlaGlnArgArgHisProGlnArgPheSerLysProAlaGluArgTyrAlaAsp-49
 51-ProHisHisProAlaArgArgArgPheAspProAlaSerGluLysIleMetLysThrLys71
 88-ProValSerArgAsnIleGlnAspMetArgLeuGluProGlnAlaGluAlaGlySerSerAsp-108
 117-LeuGlnAspArgLeuAspTyr-123
 131-LeuSerAsnGluValGluThrLeuAsnGlyLysValLysAlaLeuGluHisAlaLysThrHisProSerSer
 -154
 157-TyrValGlnLysLeuAspAspArgLysLeuLysGlu-168
 195-LysHisTyrLysSerGlyArgPhe-202
 210-LysGlyAlaAspGlyGlyAspGlyGlySerIleAlaGln-222
 231-SerArgAlaArgMetGlyAsn-237
 248-TyrAlaAsnArgPheLysAspSerProThrAlaPro-259
 266-GlyGluCysGlnTyr-270
 272-LeuGlnGlnLysAspIleAla-278
 293-ProAlaAlaLysArgAlaAlaAlaAlaValArgLysArg-305
a696

AMPHI Regions - AMPHI

18-PheGlyGlyIlePheHisPheValCysArgPheLeuSerArgValGlySerPheValGlnSerIlePheSerC
 ysPheSer-44
 65-IlePheAspLeuValPhe-70
 94-GlyLeuAsnArgPheLeuAsnLeuLeuPheGlyPheLeuArg-107

Antigenic Index - Jameson-Wolf

-579-

12-CysGlnGlyAsnLysLeu-17
 73-PheAspGlyArgSerGlyArgLeuGlyGlyArgSerArgSer-86
 108-ThrSerCysGlnGlySerArgHisHisCysGlyAsnGln-120

Hydrophilic Regions - Hopp-Woods

73-PheAspGlyArgSerGlyArgLeuGlyGlyArgSerArgSer-86
 109-SerCysGlnGlySerArgHisHisCys-117
 a700

AMPHI Regions - AMPHI

6-ThrLeuLeuSerValLeuIleProMetPheAlaGlyPhePheIleArgValProLys-24
 27-LeuProAlaLeuAspLysValLeuSerValLeu-37
 51-ArgValGluAspLeuGlySerArg-58
 80-AlaLeuAlaValLeuGlyLysLeu-87
 191-SerTrpValLysGlyLeu-196
 204-TrpTyrSerLeuSerGlyLeuVal-211
 216-TyrGlyAlaValTrpGlySerIleAlaLeuLeuAsnAspLeuAlaArgGluLeu-233
 267-ArgGlyAlaGlyGlyLeu-272

Antigenic Index - Jameson-Wolf

21-ArgValProLysProTyrLeu-27
 50-SerArgValGluAspLeuGlySerArgLeuAspAspMetAla-63
 90-TrpArgIleLysGlyLysGlyLysGlyVal-99
 118-AlaSerGlyLysLeuMetArg-124
 128-MetProSerGluAsnAlaGlyMet-135
 149-LeuLysSerSerGlyValSerLeu-156
 160-LeuValAsnArgArgGlyIleArgLeu-168
 245-ArgPheProAspAla-249
 268-GlyAlaGlyGlyLeuGluAla-274

Hydrophilic Regions - Hopp-Woods

50-SerArgValGluAspLeuGlySerArgLeuAspAspMetAla-63
 92-IleLysGlyLysGlyLysGlyVal-99
 149-LeuLysSerSerGlyValSer-155
 160-LeuValAsnArgArgGlyIleArg-167
 a701

AMPHI Regions - AMPHI

6-PheGlnValAlaGly-10
 45-ProAsnSerPheAlaSerPheLysArgPheSerSerIle-57

Antigenic Index - Jameson-Wolf

18-GlnSerThrProSerSerProThr-25
 33-ThrSerProGluAlaGly-38
 52LysArgPheSerSerIleSer-58
 72-GlyLysAlaAspIleProThr-78
 105-LysAlaSerLeuAsnAsnArgAlaThrSerSer-115
 119-SerGlySerGlyThrArgLeu-125

Hydrophilic Regions - Hopp-Woods

72-GlyLysAlaAspIle-76
 107-SerLeuAsnAsnArgAlaThrSer-114
 a702

AMPHI Regions - AMPHI

-580-

51-CysSerGlyLeuValThrVal-57
 118-LysIleSerArgGly-122

Antigenic Index - Jameson-Wolf
 1-MetProCysSerLysAlaSer-7
 28-LeuAlaArgAspSerCysSerProGlyLeu-37
 41-ThrAlaProAlaSerSer-46
 68-LeuAlaIleArgArgMetAlaSerArgProThrGlyValArgArgValIleSer-85
 88-GlyMetProProSerThrArgAlaTrpAspLysSerMetAla-101
 118-LysIleSerArgGlyValSer-124
 139-ArgTrpAspArgLeu-143

Hydrophilic Regions - Hopp-Woods
 29-AlaArgAspSerCysSer-34
 69-AlaIleArgArgMetAlaSerArgProThrGlyValArgArgValIleSer-85
 94-ArgAlaTrpAspLys-98
 139-ArgTrpAspArgLeu-143
a703

AMPHI Regions - AMPHI
 21-GlnThrLeuAlaThrValAsnGly-28
 54-GluValValAsnThrValValAlaGlnGlu-73
 79-LeuAspArgSerAlaGlu-84
 140-AlaAlaTyrAspAsnIleSerGlyPheTyrLysGly-151
 181-PheAspAlaValLeu-185
 204-ValProLeuLysAspLeuGluGlnGlyValProProLeuTyrGlnAlaIleLysAspLeuLysLys-225
 252-ValProSerPheAsp-256
 270-ArgIleAspArgAlaValGlyAlaLeu-278

Antigenic Index - Jameson-Wolf
 1-MetLysAlaLysIle-5
 26-ValAsnGlyGlnLysIleAspSerSerVal-35
 43-PheArgAlaGluAsnSerArgAlaGluAspThrProGlnLeuArg-57
 72-GlnGluValLysArgLeuLysLeuAspArgSerAlaGluLysAsnAlaLeuAlaLysLeuArgAlaGluA
 laLysSerGlyAspLysProSerPheLysThr-109
 129-LysThrGlnProValSerGluGlnGluValLysAlaAlaTyr-142
 144-AsnIleSerGlyPheTyrLysGlyThrGlnGluValGlnLeu-157
 160-IleLeuThrAspLysGluGluAsnAlaLysLysAlaValAlaAspLeuLysAlaLysLysGlyPhe-181
 188-TyrSerLeuAsnAspArgThrLysGlnThrGlyAlaProValGly-202
 207-LysAspLeuGluGlnGlyValProPro-215
 221-LysAspLeuLysGlyGluPheThrAlaThrProLeuLysAsnGlyAspPhe-238
 243-TyrValAsnAspSerArgGluValLysValProSerPheAspGluMetLysGly-260
 266-LeuGlnAlaGluArgIleAspArgAlaVal-275
 282-AlaAsnIleLysProAlaLys-288

Hydrophilic Regions - Hopp-Woods
 1-MetLysAlaLysIle-5
 29-GlnLysIleAspSerSerVal-35
 43-PheArgAlaGluAsnSerArgAlaGluAspThrProGlnLeuArg-57
 72-GlnGluValLysArgLeuLysLeuAspArgSerAlaGluPheLysAsnAlaLeuAlaLysLeuArgAlaGluA
 laLysSerGlyAspLysProSerPhe-107
 131-GlnProValSerGluGlnGluValLysAlaAlaTyr-142
 160-IleLeuThrAspLysGluGluAsnAlaLysLysAlaValAlaAspLeuLysAlaLysLysGlyPhe-181
 189-SerLeuAsnAspArgThrLysGlnThrGly-198
 207-LysAspLeuGluGln-211

-581-

221-LysAspLeuLysLysGlyGluPhe-228
 245-AsnAspSerArgGluValLysValProSerPheAspGluMetLysGly-260
 266-LeuGlnAlaGluArgIleAspArgAlaVal-275
 282-AlaAsnIleLysProAlaLys-288
a704

AMPHI Regions - AMPHI

33-GlyCysGlnAlaValAlaGlnSerIleIleAspAlaGlyLeuGly-47
 65-GlnGluIleLeuAspGlnIleArgLeuTyrAspLeuProGluValGlnSerAspPheValGluThrHis-87
 184-LeuGlyMetMetGln-188
 208-GlnGlnIleLeuIleTrpGlyGlyPheLeuMetValLeuPro-221
 232-GlnGlyAlaLeuArgAspLeuLys-239
 252-AlaIleIleMetThrPhenIleAlaGlyValTyrSer-263
 289-PheMetGluHisIleAlaArg-295
 298-AlaGlyAspAlaAlaGluArgLeuValLysLeuIleProAlaPheCysHisHisMetProAspTyrProAsp
 ThrGlnGluThr-325
 400-GlyGlyThrArgLeuSerHisIleValArgLeuLeuAspArgAlaLeuAla-416
 423-GluLeuAlaGluGlnTyr-428
 499-AlaIleGluThrLeuAlaGln-505
 527-IleSerLeuLeuArg-531
 576-LeuAsnArgIleGlyGluGlyValGly-584
 639-LeuLysAspSerAlaAlaGluAlaValArgGlnLeuAla-651
 670-GluThrAlaArgAlaLeuGlyVal-677
 691-GluTyrValLysAlaLeuGlnLysGlu-699
 744-AspLeuArgThrValAlaHisLeuLeuAsp-753
 780-AlaValLeuGlyTyrValGlnProTrpIleAlaAla-791
 799-LeuAlaValLeuGly-803
 805-AlaLeuArgLeuHisLysArg-811

Antigenic Index - Jameson-Wolf

1-MetLysThrCys-5
 9-GlyLeuAspValProGluAsn-15
 21-ArgTyrGluAsnGluAspArgGluThrCysCys-31
 46-LeuGlySerTyrTyrLysGlnArgThrAlaAspAlaGlnLysThrGluLeuProProGlnGluIleLeuAsp-
 69
 77-ProGluValGlnSerAspPheValGluThrHisGlyGlyThrArgGluAla-93
 112-GlnLeuLeuArgThrAspGlyIleVal-120
 124-LeuAsnTyrSerThrHisArgCys-131
 133-ValValTrpAspAspGlyLysIleArgLeu-142
 158-ProTyrAspAlaGlnLysIleGluAlaAlaAsnGlnLysGluArgLysGlnTyr-175
 199-TyrGlyAspIleGluProAspPhe-207
 234-AlaLeuArgAspLeuLysAsnArgArgValGlyMetAspThrProIle-249
 293-IleAlaArgArgLysAlaGlyAspAlaAlaGluArgLeuVal-306
 316-MetProAspTyrProAspThrGlnGluThrCysGlu-327
 329-AlaValValLysLeuLysAlaGlyAsp-337
 342-LysProGlyGluThrIleProValAspGlyThrVal-353
 356-GlySerSerAlaValAsnGluSer-363
 365-LeuThrGlySer-369
 374-LysMetProSerGluLysValThrAla-382
 393-IleArgThrAspArgThrGlyGlyGlyThrArg-403
 414-AlaLeuAlaGlnLysProArgThrAlaGluLeuAlaGlu-426
 486-ThrLeuAlaArgGluIle-492
 495-GlyGlyLysGlnAlaIle-500
 510-IlePheAspLysThrGlyThrLeuThrGlnGlyLysProAlaValArgArg-526
 528-SerLeuLeuArgGlyThrAspGluAlaPhe-537

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545-LeuGluGlnGlnSerGluHisProLeu-553
 560-CysArgIleSerAspGlySerValPro-568
 570-IleAlaIleLysGlnArgLeuAsnArgIleGlyGluGlyVal-583
 589-ValAsnGlyGluThrGln-594
 605-AlaGluIleSerGlyLysGluProGlnThrGluGlyGlySer-619
 635-LeuGlnAspProLeuLysAspSerAlaAlaGluAlaValArg-648
 650-LeuAlaGlyLysAsnLeu-655
 659-IleLeuSerGlyAspArgGluThrAlaVal-668
 684-AlaMetProGluAspLysLeuGluTyr-692
 694-LysAlaIleGlnLysGluGlyLysLys-702
 707-GlyAspGlyIleAsnAspAla-713
 725-AlaAlaGlyGlyThrAspIleAlaArgAspGlyAlaAsp-737
 743-GluAspLeuArgThr-747
 753-AspGlnAlaArgArgThrArgHisIleIle-762
 807-ArgLeuHisLysArgGlyLysMetGlnSerGluLysMetProSerGluGln-823

Hydrophilic Regions - Hopp-Woods

1-MetLysThrCys-5
 21-ArgTyrGluAsnGluAspArgGluThrCys-30
 50-TyrLysGlnArgThrAlaAspAlaGlnLysThrGluLeuProPro-64
 77-ProGluValGlnSerAspPheValGlu-85
 87-HisGlyGlyThrArgGluAla-93
 112-GlnLeuLeuArgThrAspGlyIleVal-120
 133-ValValTrpAspAspGlyLysIleArgLeu-142
 160-AspAlaGlnLysIleGluAlaAlaAsnGlnLysGluArgLysGlnTyr-175
 201-GlyAspIleGluProAspPhe-207
 234-AlaLeuArgAspLeuLysAsnArgArgValGlyMet-245
 293-IleAlaArgArgLysAlaGlyAspAlaAlaGluArgLeuVal-306
 318-AspTyrProAspThrGlnGluThrCysGlu-327
 329-AlaValValLysLeuLysAlaGlyAsp-337
 375-MetProSerGluLysValThr-381
 393-IleArgThrAspArgThrGlyGlyGlyThrArg-403
 414-AlaIleAlaGlnLysProArgThrAlaGluLeuAlaGlu-426
 486-ThrLeuAlaArgGluGlyIle-492
 518-ThrGlnGlyLysProAlaValArgArg-526
 531-ArgGlyThrAspGlu-535
 545-LeuGluGlnGlnSerGluHisProLeu-553
 561-ArgIleSerAspGlySerVal-567
 570-IleAlaIleLysGlnArgLeuAsnArgIleGlyGlu-581
 607-IleSerGlyLysGluProGlnThrGluGlyGly-618
 637-AspProLeuLysAspSerAlaAlaGluAlaValArg-648
 661-SerGlyAspArgGluThrAlaVal-668
 684-AlaMetProGluAspLysLeuGluTyr-692
 694-LysAlaIleGlnLysGluGlyLysLys-702
 730-AspIleAlaArgAspGlyAlaAsp-737
 743-GluAspLeuArgThr-747
 753-AspGlnAlaArgArgThrArgHisIleIle-762
 807-ArgLeuHisLysArgGlyLysMetGlnSerGluLysMetProSerGluGln-823
a705

AMPHI Regions - AMPHI

67-LysIleLeuLeuLysLeu-72
 104-AspProIleProAla-108
 147-TyrMetGlnThrPheArgArgIleValAlaProGln-158
 169-AsnGluPheIleGlyLeuPheLysAsn-177

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183-ValValThrValThrGluLeuPheArgValAlaGln-194
 196-ThrAlaAsnArgThr-200

Antigenic Index - Jameson-Wolf
 13-ThrGluThrArgAlaAspMet-19
 132-ValProLysGlyGlnTrpGlu-138
 165-ProProLeuSerAsnGlu-170
 193-AlaGlnGluThrAlaAsnArgThrTyrAsp-202
 226-AlaArgLeuGluLysArgPheAspArgTyrValAla-237

Hydrophilic Regions - Hopp-Woods
 13-ThrGluThrArgAlaAspMet-19
 193-AlaGlnGluThrAlaAsnArgThr-200
 226-AlaArgLeuGluLysArgPheAspArgTyrValAla-237
a706

AMPHI Regions - AMPHI
 9-LeuValSerArgTrpLeuAsnSerTyr-17
 24-ArgLeuIleHisAlaValArg-30
 70-IleTyrSerLysAlaValGluArgMetLeuGlyThrValIleGly-84
 111-ThrAlaSerAlaLeuAlaGlyTrpAlaAla-120
 153-ArgAlaMetAsnValLeu-158
 183-LeuAlaAspAsnLeuThrAspCysSerLysMetIleAlaGluIleSerAsnGlyArg-201
 204-ThrArgGluArgLeuGluGluAsn-211
 243-MetGluAlaMetGlnHisAlaHisArgLysIleVal-254
 318-AlaLeuAlaGluHisLeuHis-324

Antigenic Index - Jameson-Wolf
 1-MetAsnThrSerGlnArgAsnArgLeu-9
 11-SerArgTrpLeuAsnSerTyrGluArgTyrArgTyrArgArg-24
 73-LysAlaValGluArgMetLeu-79
 97-HisTyrPheHisGlyAsnLeu-103
 122-GlyLysAsnGlyTyrVal-127
 140-GlyAspAsnGlySerGluTrpPheAsp-148
 186-AsnLeuThrAspCysSerLysMetIleAlaGluIleSerAsnGlyArgArgMetThrArgGluArgLeuGlu
 GluAsnMetAlaLysMetArgGlnIleAsn-219
 221-ArgMetValLysSerArgSerHisLeuAlaAlaThrSerGlyGluSerArgIleSer-239
 249-AlaHisArgLysIleValAsn-255
 266-LysLeuGlnSerProLysLeuAsnGlySerGluIleArgLeuAsp-281
 300-GlyArgHisAlaArgArgIleArgIleAspThrAlaIleAsnProGluLeuGluAlaLeuAla-320
 334-SerThrAsnMetArgGlnGluLeu-341
 349-GlnArgThrArgArgLysTrpLeuAspAlaHisGluArgGlnHisLeu-364
 367-SerLeuLeuGluThrArgGluHisSer-375

Hydrophilic Regions - Hopp-Woods
 3-ThrSerGlnArgAsnArgLeu-9
 17-TyrGluArgTyrArgTyrArgArg-24
 73-LysAlaValGluArgMetLeu-79
 142-AsnGlySerGluTrpPhe-147
 186-AsnLeuThrAspCysSerLysMetIleAla-195
 198-SerAsnGlyArgArgMetThrArgGluLeuGluAsnMetAlaLysMetArgGlnIleAsn-219
 221-ArgMetValLysSerArgSerHis-228
 232-ThrSerGlyGluSerArgIle-238
 249-AlaHisArgLysIleValAsn-255
 266-LysLeuGlnSerProLysLeuAsnGlySerGluIleArgLeuAsp-281

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301-ArgHisAlaArgArgIleArgIle-308
 314-ProGluLeuGluAlaLeuAla-320
 336-AsnMetArgGlnGluIle-341
 349-GlnArgThrArgArgLysTrpLeuAspAlaHisGluArgGlnHisLeu-364
 367-SerLeuLeuGluThrArgGluHisSer-375
a707

AMPHI Regions - AMPHI

16-AsnLeuSerArgLeuGlnLysAla-23
 98-GluGlnGlyLeuGluAsnLeuArgArgLeuProSerVal-110
 147-GlyGlyLysThrThrGlyLysTyr-154
 222-ArgTyrHisGluAlaThrGlu-228
 267-ThrArgGlnThrTyrLysTyrIleAspAsp-276
 467-HisLysProLysGlyPheGlnThrThrAsnThr-477

Antigenic Index - Jameson-Wolf

1-XxxLysGluThrAlaPhe-6
 13-GlySerAsnAsnLeuSerArgLeuGlnLysAlaAla-24
 42-ProGlnAsnMetAspSerGlyIleLeu-50
 53-ArgValSerAlaGlyGluIleGlyAspIleArgTyrGluGluLysArgAspXxxLysSerAlaGluGlySerI
 le-77
 79-AlaPheAsnAsnLysXxxProLeuTyrArgAsnLysIleLeuAsn-93
 95-ArgAspValGluGlnGlyLeuGluAsnLeuArgArgLeuProSerValLysThrAspIle-114
 117-IleProSerGluGluGluGlyLysSerAspLeu-127
 130-LysTrpGlnGlnAsnLysProIleArg-138
 141-IleGlyIleAspAspAlaGlyGlyLysThrThrGlyLysTyrGlnGly-156
 162-XxxAspAsnProLeuGlyLeuSer-169
 180-LeuValHisLysThrAspLeuThrXxxAlaThrGlyThrGluThrGluSerGlySerArgSerTyr-201
 216-PheAsnHisAsnGlyHisArgTyrHisGluAlaThrGluGlyTyrSerValAsnTyrAspTyrAsnGlyLys
 GlnTyrGln-242
 269-GlnThrTyrLysTyrIleAspAspAspAlaGluIleGluValGlnArgArgArgSerAlaGlyTrpGluAlaGlu
 LeuArgHis-295
 303-GlnLeuAspGlyLysLeuSerTyrLysArgGlyThrGlyMetArgGlnSerMetProAlaProGluGluAsn
 GlyGlyGlyThrIleProXxxProXxxSerArgMetLysIle-339
 366-GlnTrpAsnLysThrPro-371
 374-AlaGlnAspLysLeuSerIleGlySerArgTyrThrValArgGlyPheAspGlyGluGlnSerLeuPheGly
 GluArgGlyPheTyrTrpGlnAsnThr-406
 421-AlaAspTyrGlyArgValSerGlyGluSerAla-431
 434-ValSerGlyLysGln-438
 446-PheArgGlyGlyHisLysValGlyGly-454
 464-LysProLeuHisLysProLysGlyPheGln-473

Hydrophilic Regions - Hopp-Woods

1-XxxLysGluThrAlaPhe-6
 16-AsnLeuSerArgLeuGlnLysAlaAla-24
 58-GluIleGlyAspIleArgTyrGluGluLysArgAspXxxLysSerAlaGluGlySer-76
 95-ArgAspValGluGlnGlyLeuGluAsnLeuArgArgLeuProSerValLysThrAspIle-114
 118-ProSerGluGluGlyLysSerAspLeu-127
 141-IleGlyIleAspAspAlaGlyGlyLysThrThrGlyLysTyr-154
 180-LeuValHisLysThrAspLeu-186
 190-ThrGlyThrGluThrGluSerGlySerArgSer-200
 222-ArgTyrHisGluAlaThrGlu-228
 273-TyrIleAspAspAlaGluIleGluValGlnArgArgArgSerAlaGlyTrp-289
 291-AlaGluLeuArgHis-295

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306-GlyLysLeuSerTyrLysArgGlyThrGlyMetArgGlnSerMetProAlaProGluGluAsnGlyGly-32
 8
 333-XxxXxxSerArgMetLysIle-339
 374-AlaGlnAspLysLeuSerIle-380
 388-GlyPheAspGlyGluGln-393
 422-AspTyrGlyArgValSerGlyGluSer-430
 465-ProLeuHisLysProLysGly-471
a708

AMPHI Regions - AMPHI
 26-ProSerArgAlaGluLysAlaAsnGlnValSerAsnIle-38
 57-AlaSerIleGluAspAlaLeuLysSerAspPro-67
 79-IleTyrGlnTyrLeuLys-84
 89-AlaGlnGluSerPhe-93
 119-AsnArgProAlaGluSerMetAla-126
 128-PheAspLysAlaLeu-132
 142-IleAlaAsnLeuAsnLys-147
 176-ProAlaPheLysGluLeuAlaArg-183
 221-LysAlaLeuGlyAsnAlaGln-227

Antigenic Index - Jameson-Wolf
 2-ProPheLysProSerLysArgIleSer-10
 19-AlaCysSerThrSerTyrArgProSerArgAlaGluLysAlaAsnGln-34
 46-TyrMetArgGlyGlnAspTyrArgGlnXxxThrAlaSerIleGluAspAlaLeuLysSerAspProLysAsnGlu-70
 84-LysValAsnAspLysAlaGlnGluSerPheArg-94
 97-LeuSerIleLysProAspSerAlaGluIleAsnAsnAsnTyr-110
 115-CysArgLeuAsnArgProAlaGlu-123
 131-AlaLeuAlaAspProThrTyrProXxx-139
 146-AsnLysGlyIleCysSerAlaLysGlnGlyGln-156
 176-ProAlaPheLysGluLeuAlaArgThrLysMet-186
 191-LeuGlyAspAlaAspTyrTyrPheLysLysTyrGlnSerArgValGluValLeuGlnAlaAspAspLeu-213
3
 240-PheProTyrSerGluGluLeuGln-247

Hydrophilic Regions - Hopp-Woods
 4-LysProSerLysArgIle-9
 24-TyrArgProSerArgAlaGluLysAlaAsnGln-34
 46-TyrMetArgGlyGlnAspTyrArgGlnXxxThrAlaSerIleGluAspAlaLeuLysSerAspProLysAsnGlu-70
 84-LysValAsnAspLysAlaGlnGluSerPheArg-94
 99-IleLysProAspSerAlaGluIle-106
 117-ArgLeuAsnArgProAlaGlu-123
 149-IleCysSerAlaLysGlnGly-155
 177-AlaPheLysGluLeuAlaArgThrLysMet-186
 201-TyrGlnSerArgValGluValLeuGlnAlaAspAspLeu-213
a709

AMPHI Regions - AMPHI
 6-SerLeuLeuAspMetProArgGlyGlu-14
 18-ValValValAlaLeuIleAlaAlaMetGly-27
 37-ProHisMetSerIleIleAlaAlaIleValValLeu-48
 54-AlaArgGlyLeuLysTyrAsn-60
 64-GlnGlyMetIleGlyAlaLeuAsnGlnGly-73
 115-SerAlaPheAlaLeuCysSerVal-122

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130-SerLeuThrThrCysAlaThrVal-137
 168-LysMetSerProLeuSerAspThrXxx-176
 185-IleAspLeuPheGluHisIleLysAsnMetMetTyrThrThr-198
 209-MetLeuXxxLeuLeuPro-214
 221-LeuAsnSerValGluSerPheArg-228
 234-ThrGlyLeuValHisCysTyrSerLeuIleProPheAlaLeuLeuValValLeu-251
 261-AlaMetLeuPheThrValIleAlaAlaValAlaValThrTyr-274
 278-ThrProAspLeuUrgGlnLeuGlyAlaTrpPhe-288
 299-XxxXxxAspIleAlaLysLeuIleSerArgGlyGly-310
 334-LeuGlyAlaIleProSerLeuLeuAspAlaValArgSerPheLeuThr-349
 382-ThrPheLysProVal-386
 395-ArgAsnLeuSerArgThrLeuGluAspAlaGlyThrValIleAsnProLeuValProTrpSerValCysGly
 ValPheIleXxxHis-423

Antigenic Index - Jameson-Wolf

9-AspMetProArgGlyGluAla-15
 55-ArgGlyLeuLysTyrAsnAspMetGln-63
 164-XxxXxxGlyXxxLysMetSerProLeuSerAspThrXxxGlyXxxSer-179
 222-AsnSerValGluSerPheArgSerGlnLeuGlu-232
 277-SerThrProAspLeuArgGln-283
 290-GlyGlyTyrLysLeuGluGlyGluAlaXxxXxxAspIleAlaLysLeuIleSerArgGlyGlyLeuGlu-31
 2
 349-ThrAsnAlaGlyArgXxxThr-355
 378-LeuSerGlyGluThrPheLysProValTyrAspLysLeuGlyLeuHisSerArgAsnLeuSerArgThrLeu
 GluAspAlaGlyThr-406

Hydrophilic Regions - Hopp-Woods

9-AspMetProArgGlyGluAla-15
 57-LeuLysTyrAsnAspMetGln-63
 165-XxxGlyXxxLysMetSerProLeuSerAspThrXxxGly-177
 225-GluSerPheArgSerGlnLeuGlu-232
 279-ProAspLeuArgGln-283
 293-LysLeuGluGlyGluAlaXxxXxxAspIleAlaLysLeuIleSer-307
 396-AsnLeuSerArgThrLeuGluAspAlaGly-405

a710

AMPHI Regions - AMPHI

6-LysIleArgLeuMetArgGluLeuAsnLysTrpSerGln-18
 31-GlyTyrAlaLysIleGlu-36
 45-ProArgLeuGlnLeuAlaGlnIlePheLysIleAspMetTrpAspLeuLeuLys-63
 105-CysLysGluMetLeuGlu-110

Antigenic Index - Jameson-Wolf

1-MetGluThrHisGluLysIleArgLeuMetArgGluLeuAsnLysTrpSerGlnGluAspMetAlaGluLysLe
 uAla-26
 33-AlaLysIleGluArgGlyGluThrGlnLeuAsnIleProArgLeuGluGln-49
 62-LeuLysSerGlyGlyGlyGly-68
 74-AsnAspValAspThrAsnSerGlyGlu-82
 88-AlaGlnAspAlaSerGlyLys-94
 100-MetGluLeuLysHisCysLysGluMetLeuGluHisLysAspLysGluIleGluLeuArgLysLeuThr
 Glu-124

Hydrophilic Regions - Hopp-Woods

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1-MetGluThrHisGluLysIleArgLeuMetArgGluLeuAsnLysTrpSerGlnGluAspMetAlaGluLysLe
uAla-26
33-AlaLysIleGluArgGlyGluThr-40
45-ProArgLeuGluGln-49
74-AsnAspValAspThrAsnSerGly-81
100-MetGluLeuLysHisCysLysGluMetLeuGluHisLysAspLysGluIleGluLeuLeuArgLysLeuThr
Glu-124
a711

AMPHI Regions - AMPHI

28-AlaGluSerTyrArgAsnLeuThrAlaSerGluIleAlaLysValTyrThrIleAlaArgMetThr 49
*

AspLeuAspMetLeuAsnAspIleLys-58
67-SerGlyGlnSerPheAspAspTrpArgLysGlyIleLeu-79
95-GlyLysAspIleIleAspProAlaThrGlyGluValpheGlySerProArgArgLeuGluThrIleTyrArgT
hrAsnMet-121
128-GlyGlnTyrGlnGlyTyrMet-134
158-SerAlaIleAspGly-162
195-ValGluArgGlnGly-199
207-SerAspAsnLeuValGluThrHis-214
258-LysTyrAspArgAlaLeuAlaHisGlnPheAla-268
281-PheLysGlnLeuGluLysGluPheTyr-289
329-GlnGluLeuIleGlyMetThr-335
352-SerArgGluGlyGlnAsnPhe-358
360-AspSerTyrTyrAlaPheLeuProAspMetLeuGlnAsnProGlu-374
395-TrpAlaValLeuLysTyrIleLysGluValAspGluIle-407
413-ArgIleSerAsnAspLysGluIleAlaLys-422

Antigenic Index - Jameson-Wolf

11-SerLeuProProLysGlyAslIleGlu-19
21-LeuGluSerLysLysValThrAlaGluSerTyrArgAsnLeuThr-35
55-AsnAspIleLysThrSerMet-61
63-GluSerAlaLysGlyGlnSerPheAspAspTrpArgLysGlyIle-78
82-LeuSerAsnLysGlyTrpLeuHisProAsnGlyHisAsnGlyLysAspIleIleAspProAlaThrGlyGluV
alPheGlySerProArgArgLeuGluThrIleTyrArgThrAsnMet-121
126-AsnIleGlyGlnTyrGlnGly-132
135-AlaAsnIleAspAlaArgProTyrTrp-143
147-AlaValGlyAspSerArgThrArgProAlaHisSerAla-159
165-TyrArgTyrAspAspProTyrTrp-172
177-ProProAsnGlyTyrAsnCysArgCysSer-186
190-LeuSerGluArgAspValGluArgGlnGlyArgIleValGlyGlnSerThrSerAspAsnLeuValGlu-21
2
215-LysIleTyrAsnLysLysGlyAspThr-223
229-TyrLysAlaProAspGlySerLeuTyrThrThrAspArgGlyPheAspTyrAsnAlaGlyArgMetAsnTyr
ArgProAspLeuAspLysTyrAspArgAlaLeu-263
268-AlaLysAlaGluMetGlyGlyAlaAspPheLysThrSerPheLysGlnLeuGluLysGluPheTyrGluVal
LysGlnArgLeuAspIleAspGlyLysProAspLysGluGlnLysIleLysIleArgAsnAlaLeu-313
324-LeuSerLysGluThrGlnGlu-330
342-SerAspAspThrLeuValLysGlnValAspSerArgGluGlyGlnAsnPheAspAspSerTyrTyr-363
370-LeuGlnAsnProGluHisValIleArgAspAsnArgGlu-382
387-AlaArgTyrLysGlySer-392
400-TyrIleLysGluValAspGlu-406
411-SerTyrArgIleSerAsnAspLysGluIleAla-421
424-MetAlaLysLysLysValLeuLys-431

Hydrophilic Regions - Hopp-Woods

13-ProProLysLysAlaIleGlu-19
 21-LeuGluSerLysLysValThrAlaGluSerTyrArg-32
 55-AsnAspIleLysThrSerMet-61
 63-GluSerAlaLysSerGlyGlnSerPheAspAspTrpArgLys-76
 93-HisAsnGlyLysAspIleIleAsp-100
 108-GlySerProArgArgLeuGluThr-115
 147-AlaValGlyAspSerArgThrArgProAla-156
 190-LeuSerGluArgAspValGluArgGlnGlyArgIleVal-202
 205-SerThrSerAspAsnLeuValGlu-212
 215-LysIleTyrAsnIlysLysGlyAspThr-223
 238-ThrThrAspArgGlyPheAsp-244
 250-MetAsnTyrArgProAspLeuAspLysTyrAspArgAlaLeu-263
 268-AlaLysAlaGluMetGlyGlyAlaAspPheLysThrSerPheLysGlnLeuGluLysGluPheTyrGluVal
 LysGlnArgLeuAspIleAspGlyLysProAspLysGluGlnLysIleLysIleArgAsnAlaLeu-313
 324-LeuSerLysGluThrGlnGlu-330
 344-AspThrLeuValGlyGlyValAspSerArgGluGlyGlnAsnPheAsp-359
 375-HisValIleArgAspAsnArgGlu-382
 400-TyrIleLysGluValAspGlu-406
 414-IleSerAsnAspIlysGluIleAla-421
 424-MetAlaLysLysIlysValLeuLys-431

a713**AMPHI Regions - AMPHI**

18-GluHisArgHisTrpGlu-23
 115-AspAlaIalalysLeuAlaAlaProTrpProGlnIle-127
 150-ThrValTrpGlnAlaLeuThrHisIleAlaAsnSerVal-162
 257-AspAsnLeuAlaAlaLeuGln-263
 265-GlnAlaLysLysGln-269

Antigenic Index - Jameson-Wolf

1-MetGlnAsnAsnSerTyrGly-7
 13-ArgValGlyGlyLysGluHisArgHisTrpGluArgTyrAspIleAspSerAspPhe-31
 44-ArgLeuGlyProGluAlaAlaIleProAspLeuSerGlyGluSerCysGluValValIle-63
 74-GlySerGlnArgHisGlyLysSerGlyGlyArgGluLeuSerLeuSerGlyArgAspLeu-94
 106-LeuAsnValIlysGly-110
 115-AspAlaAlaIlysLysLeu-120
 134-ValGluAsnAsnProAlaLeuAspLysIleAspIleGluProGlyGluThrVal-151
 167-TrpLeuGluProAspGlyThrLeu-174
 192-SerArgThrAspSerArgArgAsnIleGluArgMetAspIleGluTrpAspThrAspAsnArgPheSerGlu-215
 222-SerHisGlyArgSerGlyAspSerAlaLysHisAspLeu-234
 236-TrpValTyrLysAspProThrMetThrLeuHisArgProLysThrValVal-252
 254-SerAspAlaAspAsn-258
 263-GlnIlysGlnAlaLysLysGlnLeuAla-271
 284-ValGlyGlyHisLysThrArgAspGly-292
 302-HisValIleAspAspGluHisGlyIle-310
 321-PheMetLeuSerArgMetAspGlyThrGlnThrGluLeuArgLeuLysGluAspGlyIleTrpThrProAsp
 AlaTyrProLysLysAlaGluAlaAlaArgLysArgLysGlyLysArgLysGlyValSerHisLysGlyLysLysG
 lyGlyLysLysGlnAlaGlu-376

Hydrophilic Regions - Hopp-Woods

14-ValGlyGlyLysGluHisArgHisTrpGluArgTyrAspIleAspSer-29
 54-LeuSerGlyGluSerCysGluValValIle-63

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76-GlnArgHisGlyLysSerLysGlyGlyArgGluLeuSerLeuSerGlyArgAspLeu-94
 115-AspAlaAlaLysLysLeu-120
 138-ProAlaLeuAspLysIleAspIleGluProGlyGlu-149
 168-LeuGluProAspGly-172
 193-ArgThrAspSerArgArgAsnIleGluArgMetAspIleGluTrpAspThrAspAsnArgPheSer-214
 222-SerHisGlyArgSerGlyAspSerAlaLysHisAspLeu-234
 246-HisArgProLysThr-250
 254-SerAspAlaAspAsn-258
 263-GlnLysGlnAlaLysLysGlnLeuAla-271
 286-GlyHisLysThrArgAsp-291
 302-HisValIleAspAspGluHisGlyIle-310
 325-ArgMetAspGlyThrGlnThrGluLeuArgLeuLysGluAspGlyIleTrp-341
 345-AlaTyrProLysIleAlaGluAlaAlaArgLysArgLysGlyLysArgLysGlyValSerHisLysGlyLys
 LysGlyGlyLysGlnAlaGlu-376
a714
AMPHI Regions - AMPHI
 6-IleLeuArgGlyLeuLeuPro-12
 34-LeuAspAlaValAlaGluSerAlaGlnSerValAlaAspAlaValAspProSer-51
 55-GlnMetLeuAlaAspTrpGluArgValLeuGlyLeu-66
 79-AlaValMetAlaLysLeuAsnGluThrGly-88
 98-LeuAlaGluAlaAla-102
 110-GluProGlnProPhe-114
 116-AlaGlyValAsnArgAlaGlyAspArgLeu-125
 155-AlaGlyAspArgLeuThrAspTyrSerAspAlaValIleGluSerLeuPheAsnArgLeuLys-175

Antigenic Index - Jameson-Wolf
 15-SerTyrAlaArgAsnAlaProArgValArgAlaGlnAlaGluIleAspGlyAlaAla-33
 36-AlaValAlaGluSerAlaGlnSerVal-44
 46-AspAlaValAspProSerSerAlaGly-54
 64-LeuGlyLeuAspGlyThrGlyLysAsnArgGlnArgArgVal-77
 83-LysLeuAsnGluThrGlyLeu-90
 107-GlnIleAspGluProGlnProPheArgAlaGlyValAsnArgAlaGlyAspArgLeuAlaPro-127
 138-ValArgGlyGlyAsnAsnArgIleThrArgPheArgAlaGlyIle-152
 154-AlaAlaGlyAspArgLeuThrAspTyrSerAspAlaValIle-167
 170-LeuPheAsnArgLeuLysPro-176
a715

Hydrophilic Regions - Hopp-Woods
 18-ArgAsnAlaProArgValArgAlaGlnAlaGluIleAspGlyAlaAla-33
 36-AlaValAlaGluSerAlaGlnSerVal-44
 46-AspAlaValAspProSerSer-52
 68-GlyThrGlyLysAsnArgGlnArgArgVal-77
 107-GlnIleAspGluProGlnProPhe-114
 117-GlyValAsnArgAlaGlyAspArgLeuAlaPro-127
 139-ArgGlyGlyAsnAsnArgIleThrArgPheArgAla-150
 154-AlaAlaGlyAspArgLeuThrAspTyrSerAspAlaValIle-167
 170-LeuPheAsnArgLeuLysPro-176
a715

AMPHI Regions - AMPHI
 15-GlnIleGluArgLeuGlyAsnGlyIle-23
 31-ArgArgLeuSerGluThrMetHis-38
 64-LeuSerAspSerGlyArgLeuLysAspSerPheSer-75
 94-IleHisAsnPheGly-99

Antigenic Index - Jameson-Wolf
 15-GlnIleGluArgLeuGlyAsnGlyIleGluAsnArgTyrLeuLeu-29

-590-

47-TyrAlaGlyArgProLysTrpLeuGlyLeuLysTyrArgAspGlyLysProLeuSerAspSerGlyArgLeuLysAspSerPheSerThrLeuSerAspAsnAspThrAla-83
 98-GlyGlyMetAlaGlyArgAsnArgLysValArgIleProGlnArgGluPhe-114
 118-ThrAspAspAspLysGlnAlaLeuMetAspAspValGlnAsp-131

Hydrophilic Regions - Hopp-Woods

15-GlnIleGluArgLeuGlyAsn-21
 57-LysTyrArgAspGlyLysProLeuSerAspSerGlyArgLeuLysAspSerPhe-74
 78-SerAspAsnAspThr-82
 101-AlaGlyArgAsnArgLysValArgIleProGlnArgGlu-113
 118-ThrAspAspAspLysGlnAlaLeuMetAspAspValGlnAsp-131
a716

AMPHI Regions - AMPHI

33-GlyValHisLysSerAlaHisGly-40
 71-AlaThrValLysLysThrHisLysHisThrLysAla-82

Antigenic Index - Jameson-Wolf

1-MetAsnLysAsnIle-5
 23-AlaAlaAsnLysProAlaSerAsnAlaThrGlyValHisLysSerAlaHisGlySerCysGlyAlaSerLysSerAlaGluGlySerCysGlyAlaAlaGlySerLysAlaGlyGluGlyLysCysGlyGluGlyLysCysGlyAlaThrValLysThrHisLysHisThrLysAlaSerLysAlaLysSerAlaGluGlyLysCysGlyGluGlyLysCysGlySerLys-102
a716

Hydrophilic Regions - Hopp-Woods

23-AlaAlaAsnLysProAlaSer-29
 33-GlyValHisLysSerAlaHis-39
 43-GlyAlaSerLysSerAlaGluGlySerCys-52
 55-AlaGlySerLysAlaGlyGluGlyLysCysGlyGluGlyLysCys-69
 71-AlaThrValLysLysThrHisLysHisThrLysAlaSerLysAlaLysSerAlaGluGlyLysCysGlyGluGlyLysCysGlySerLys-102
a717

AMPHI Regions - AMPHI

175-AlaValTyrAlaLeuAlaAsn-181
 209-LeuHisArgGlyLeu-213
 223-SerIleAlaTyrTrp-227
 241-AlaGlyLeuGluGinLeuGly-247
 263-GlnSerIlePheSerThrValTrpThrProTyrIlePheArgAlaIleGluAla-280
 305-ThrGlyIlePheSerProLeuAlaSer-313
 347-LeuAsnValValArgLysThr-353
 358-LeuAlaThrLeuGlyAlaLeuAla-365
 401-SerSerCysArgLeuTrpGlnProLeuLysArgLeu-412
 430-CysPheGlyThrPro-434
 442-GlyValTrpAlaValTyrLeuAla-449
 457-LysAspLeuHisLysLeuPheHisTyr-465

Antigenic Index - Jameson-Wolf

1-MetAspThrLysGlu-5
 32-ProAlaAspAspIleGlyArg-38
 69-AlaAspLysAspThrLeu-74
 95-SerArgProSerLeuProSerGluIle-103
 135-MetGluGlyArgAla-139
 192-AsnArgCysArgLeuLysAlaValArgArgAlaProPheSerSer-206
 231-SerAlaAspArgLeuPheLeu-237
 278-IleGluAlaAsnAlaProProAlaArgLeu-287
 289-AlaThrAlaGluSer-293

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317-ProGluAsnTyrAla-321
 349-ValValArgLysThrArgProIleAla-357
 376-ProSerGlyGlyAlaArgGly-382
 398-LysThrGluSerSerCysArgLeu-405
 453-LeuArgHisArgLysAspLeuHis-460

Hydrophilic Regions - Hopp-Woods

1-MetAspThrLysGlu-5
 69-AlaAspLysAspThrLeu-74
 135-MetGluGlyArgAla-139
 192-AsnArgCysArgLeuLysAlaValArgArgAlaProPhe-204
 281-AsnAlaProProAlaArgLeu-287
 289-AlaThrAlaGluSer-293
 349-ValValArgLysThrArgPro-355
 378-GlyGlyAlaArgGly-382
 399-ThrGluSerSerCys-403
 453-LeuArgHisArgLysAspLeuHis-460
a718-1

AMPHI Regions - AMPHI

28-IleThrAlaThrGlyArgValIleAlaGluHisProSerAsnPheIleThrProGln-46
 49-ArgAlaLeuPheGlu-53
 110-AspGlnAlaTyrGluMetMetAspSerLeuProThr-121
 124-AspLeuIleMetAspLeuMetAspAlaValGlyHisGly-136
 160-ProGlnSerTrpPheLys-165
 198-ArgSerValGlnGln-202
 210-ThrLeuSerTrpLeuTyrMetPhe-217
 219-HisTyrAlaValHisAspPheAlaGluPheLeuGluLeu-231
 255-ArgAlaValAlaGluIle-260
 279-AlaAlaAsnGlyMetThrSer-285
 320-ThrAsnAlaLeuGlyAsnIleHisAsnGluIleArg-331
 341-GlnValAlaGlnThrIleThrSerGlnIleIleGlyProPhe-354
 363-AspProAsnArgVal-367
 376-GluProLysAspIleAlaValPheAlaAspAlaIleProLysLeuValAsp-392
 395-ValGlnIleProGlu-399
 420-ArgGlnValProAspAsnPro-426
 448-HisGlnGluIleLeuAspGlyAlaLeuAspAsp-458
 469-LeuAsnProMetValArgGlnAlaValAlaAlaLeuAsnAlaCysAsnSerTyrGlu-487

Antigenic Index - Jameson-Wolf

4-IleMetAlaLysLysAsnAsnLysThrLysIleGlnLysProGluAlaAlaLeu-21
 30-AlaThrGlyArgValIleAla-36
 38-HisProSerAsnPhe-42
 44-ThrProGlnLysMetArgAlaLeuPheGluAspAlaGluSerGlyAspIleArgAlaGlnHis-64
 68-AlaAspIleGluGluArgAspSerAspIle-77
 81-MetGlyThrArgLysArgAla-87
 95-ValAlaProProArgAsnAlaThrProGluGluLysLeuSerAspGlnAlaTyrGluMet-115
 119-LeuProThrLeuGlu-123
 148-AspGlyLeuTyrLeuProArgAsnPheIleHisArgProGlnSerTrpPheLysTrpAspLysAspAsnGly
 Leu-172
 174-LeuArgThrArgGluAsnProGluGluAla-184
 193-HisThrGlnLysSerArgSerValGlnGlnAlaArgAsnGlyLeuPhe-208
 237-ArgIleGlyLysTyrGlyAlaGlyAlaThrLysGluGluLysAsnThrLeu-253
 268-MetProGluGlyMetGluIleGluLeu-276
 280-AlaAsnGlyMetThrSerAla-286
 295-AspTrpCysGluLysSerAlaAla-302

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310-LeuThrSerGlyAlaAspGlyLysSerSerThrAsnAlaLeuGly-324
 328-AsnGluIleArgArgAspLeuLeuValSerAspAlaLysGlnVal-342
 359-TyrProHisAlaAspProAsnArgValProLysPheGluPheAspThrArgGluProLysAspIle-380
 397-IleProGluSerTrpValArgAspLysLeuVal-407
 410-AspValGlnGluGlyGluAlaValLeu-418
 420-ArgGlnValProAspAsnProValAsnArg-429
 440-ValProSerLysAlaThrGlyArgHisGlnGluIleLeuAspGlyAlaLeuAsp-457
 459-AlaLeuValGluProAspPheAsnGlnLeu-469
 484-AsnSerTyrGluGluAlaAspAla-491
 499-AsnLeuAspAsnAlaLysLeuArgThr-507
 519-LeuGlyGlnAspHisAlaArgAla-526

Hydrophilic Regions - Hopp-Woods

4-IleMetAlaLysLysAsnAsnLysThrLysIleGlnLysProGluAlaAlaLeu-21
 46-GlnLysMetArgAlaLeuPheGluAspAlaGluSerGlyAspIleArgAlaGlnHis-64
 68-AlaAspIleGluGluArgAspSerAspIle-77
 81-MetGlyThrArgLysArgAla-87
 96-AlaProProArgAsnAlaThrProGluGluGluLysLeuSerAspGlnAlaTyrGluMet-115
 165-LysTrpAspLysAspAsnGlyLeu-172
 174-LeuArgThrArgGluAsnProGluGlyGluAla-184
 195-GlnLysSerArgSerValGlnGlnAlaArg-204
 245-AlaThrLysGluGluLysAsnThrLeu-253
 270-GluGlyMetGluIleGluLeu-276
 295-AspTrpCysGluLysSerAlaAla-302
 312-SerGlyAlaAspGlyLysSerSerThr-320
 328-AsnGluIleArgArgAspLeuLeuValSerAspAlaLysGlnVal-342
 363-AspProAsnArgValProLysPheGluPheAspThrArgGluProLysAsp-379
 401-TrpValArgAspLysLeuVal-407
 410-AspValGlnGluGlyGluAlaValLeu-418
 421-GlnValProAspAsnProValAsn-428
 440-ValProSerLysAlaThrGlyArgHisGlnGluIleLeuAspGlyAlaLeuAsp-457
 485-SerTyrGluGluAlaAspAla-491
 501-AspAsnAlaLysLeu-505
 522-AspHisAlaArgAla-526

a720**AMPHI Regions - AMPHI**

19-GlnAlaValArgLeuLeuSerThrSer-27
 46-AlaProAspLeuIleGluValAsn-53
 66-AlaLeuArgAlaValGlnThrAla-73
 91-GlnThrAlaGluSerLeu-96
 102-ArgLeuAsnAlaLeuValAla-108
 126-GlyThrIleHisGlnIleAlaHisGluPheTyrGlyAspIleAlaArgAlaGluLeuVal-146

Antigenic Index - Jameson-Wolf

1-GlyLeuGlnAsnArgLeuAsnArgLeuThrAlaLysGlnVal-14
 39-AlaHisGlyGluGluMetThrAla-46
 48-AspLeuIleGluValAsnArgAlaMetArgArgArgMetGlnAla-62
 74-AlaAlaGluSerGlyGlyLeuThrAla-82
 91-GlnThrAlaGluSerLeuArgAlaAlaAla-100
 112-AsnGlnLysProProLeu-117
 121-GlnAlaProIleAspGlyThr-127
 139-IleAlaArgAlaAlaGlu-144
 157-PheIleLysArgGlyThrLeuValAsnSerTyrAlaLys-169

Hydrophilic Regions - Hopp-Woods

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4-AsnArgLeuAsnArgLeuThrAla-11
 39-AlaHisGlyGluGluMetThrAla-46
 48-AspLeuIleGluValAsnArgAlaMetArgArgArgMetGlnAla-62
 74-AlaAlaGluSerGlyGly-79
 94-GluSerLeuArgAlaAlaAla-100
 139-TleAlaArgAlaAlaGlu-144
a721
AMPHI Regions - AMPHI
 86-AlaGlyTrpMetArgTrpLeuGlu-93
 119-ArgTyrIleSerAlaVal-124
 134-SerLysIlePheHisAlaAlaLeuThrAsnPheProAlaLeuAspGlyMetAspGluValLeuAla-155
 169-AsnProMetGlyLeuLeuGlnGlnLeuPheGlyLeu-181
 209-AspValPheAlaGln-213
 235-LysTyrAlaProIleSerValValGlnGluLeuGln-246
 281-TrpAlaGluGlyValLeuLysGlnProGlyGly-291
 293-AlaPheLeuThrGlyPheIleGlu-300

Antigenic Index - Jameson-Wolf

1-MetSerLysAsnAlaGln-6
 16-GluValGlnProLysAspGlyArgIle-24
 27-LeuProTyrGlyGlu-31
 33-ArgAlaValAspGlyArgProThrAspValProAla-44
 48-ThrGluGluAsnGlyHisAsp-54
 58-LeuAlaAsnSerSerArgAsnGlnLeu-66
 74-LeuTyrLysGluLysAsnGlyGlnProAlaPro-84
 93-GluPheThrProLysGlyMetPheAla-101
 104-GluTrpThrAspLysAlaAla-110
 114-AlaAlaLysGluTyrArg-119
 125-PheSerTyrAspThrLysGlyTyrVal-133
 148-AspGlyMetAspGluValLeu-154
 160-GlnIleLeuLysProGluThrGluGlnAsnProMetLysGluLeuLeu-175
 182-ProAspAlaGlyGluGluLeuLysAla-191
 197-ValGluAlaLysProLysAspValAlaLeu-206
 214-LeuAlaGluLysAspSerArgIle-221
 227-GlnThrAlaLysPrcAspLeuThrLysTyrAla-237
 254-AlaLysGlnGluAlaAspLysGlyAsnGlu-263
 276-ProAlaGlnLysGluTrpAla-282
 285-ValLeuLysGlnProGlyGly-291
 310-GlySerGlnThrGlyGlyLysAlaProAspGluArgValAla-323
 326-ThrAlaGluGluAlaAlaAla-332
 337-GlyMetSerGlyGluGluPheValLysIleLysGluSerGluGlyLys-352

Hydrophilic Regions - Hopp-Woods

1-MetSerLysAsnAlaGln-6
 17-ValGlnProLysAspGlyArgIle-24
 33-ArgAlaValAspGlyArgProThrAsp-41
 49-GluGluAsnGlyHis-53
 74-LeuTyrLysGluLysAsnGlyGln-81
 104-GluTrpThrAspLysAlaAla-110
 114-AlaAlaLysGluTyrArg-119
 148-AspGlyMetAspGluValLeu-154
 162-LeuLysProGluThrGluGlnAsnProMetLysGluLeuLeu-175
 183-AspAlaGlyGluGluGluLeuLysAla-191
 197-ValGluAlaLysProLysAspValAlaLeu-206
 214-LeuAlaGluLysAspSerArgIle-221

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228-ThrAlaLysProAspLeuThrLys-235
 254-AlaLysGlnGluAlaAspLysGlyAsnGlu-263
 276-ProGlaGlnLysGluTrpAla-282
 313-ThrGlyGlyLysAlaProAspGluArgValAla-323
 326-ThrAlaGluGluAlaAlaAla-332
 339-SerGlyGluGluPheValLysIleLysGluSerGluGlyLys-352
a724

AMPHI Regions - AMPHI

6-LeuAlaLysLysThr-10
 12-GlnThrAlaLysAsnIleGlyGluThrLeuArg-22
 40-ArgValGlnLeuSer-44
 47-AlaAspGluThrLeuGlnAspLeuGluHisLeuGlnGlu-59

Antigenic Index - Jameson-Wolf

5-LysLeuAlaLysLysThrAlaGlnThrAlaLysAsnIleGlyGluThrLeuArgAlaAlaPheArgGlyLysIl
 e-29
 34-SerSerGluProIleGlnArgValGlnLeuSerGlyLeuAlaAspGluThrLeuGlnAspLeuGluHis-56
 60-TyrGlyPheAlaSerHisProProAspGlySerGluAla-72
 77-LeuGlyGlyAsnThrSer-82
 90-GlnHisGlySerTyrArgIleLysAsnLeuLysProGlyGluThr-104
 108-AsnHisGluGlyAlaLysIleValIleLysGlnGlyLysIleIleGluAlaAspCysAspVal-128
 130-ArgValAsnCysLysGlnTyrGlu-137
 142-ThrAspAlaLysPhe-146
 162-GlnIleAsnGlyAsnGly-167
 170-AlaValGluGlyAspGlyAlaThrPheSerGlyAspValAsnGlnThrGlyGlySerPheAsnThrAsp
 GlyAspValValAla-198
 205-GlnHisProHisThrAspSerIleGlyGlyLysThrLeuProAlaGluProAla-222

Hydrophilic Regions - Hopp-Woods

5-LysLeuAlaLysLysThrAlaGlnThrAlaLysAsnIleGlyGluThrLeuArgAlaAlaPheArgGly-27
 46-LeuAlaAspGluThrLeuGlnAspLeuGluHis-56
 66-ProProAspGlySerGlu-71
 94-TyrArgIleLysAsnLeuLysProGlyGlu-103
 110-GluGlyAlaLysIleValIleLysGlnGlyLysIleIleGluAlaAspCysAspVal-128
 132-AsnCysLysGlnTyrGlu-137
 142-ThrAspAlaLysPhe-146
 190-PheAsnThrAspGlyAspVal-196
 207-ProHisThrAspSerIleGly-213
a726

AMPHI Regions - AMPHI

12-AspThrLeuGlySerIleProGlu-19
 55-ProArgProSerGluTyrHisGlu-62
 74-AlaAlaAlaAlaArg-78
 110-IleAspSerPheTyrArg-115
 122-AlaArgGlnAlaAsp-126
 137-IleAlaAlaAlaArg-141
 180-IleGluThrAlaProGlyLeuAspAlaLeuGluLysGluIleGlu-194

Antigenic Index - Jameson-Wolf

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5-PheLysAsnGlyPheTyrAspAspThrIleLeuGlySerIleProGluGly-20
 24-ValArgAlaGluGluTyr-29
 37-AlaGlnGlyGlyGlnIleAlaAlaAspSerAspGlyArgProValLeuThrProProArgProSerGluTyrH
 isGluTrpAspGlyLysLysTrpGluIle-70
 78-ArgPheAlaGluGlnLysThr-84
 90-LeuAlaAlaLysAlaAspGluIleLysAsnSer-100
 106-ProGlnValGluIleAspSerPheTyrArgGlnGluLysGluAlaLeuAlaArgGlnAlaAspAsnAsnAla
 ProThr-131
 151-LysValValGluLysSerAlaArg-158
 167-IleGlyLysArgGlnGlnLeuGluAspLysLeuAsnThr-179
 181-GluThrAlaProGlyLeuAspAlaLeuGluLysGluIleGluGlu-195

Hydrophilic Regions - Hopp-Woods

24-ValArgAlaGluGluTyr-29
 42-IleAlaAlaAspSerAspGlyArgPro-50
 55-ProArgProSerGluTyrHisGluTrpAspGlyLysLysTrpGluIle-70
 78-ArgPheAlaGluGlnLysThr-84
 90-LeuAlaAlaLysAlaAspGluIleLysAsn-99
 114-TyrArgGlnGluLysGluAlaLeuAlaArgGlnAlaAspAsnAsnAla-129
 151-LysValValGluLysSerAlaArg-158
 167-IleGlyLysArgGlnGlnLeuGluAspLysLeuAsnThr-179
 187-AspAlaLeuGluLysGluIleGluGlu-195
a727

AMPHI Regions - AMPHI

6-LeuLeuAlaAsnAsn-10
 12-GlnProIleAlaIleAla-18
 61-TyrAlaArgGluLeuGlu-66
 118-GlyCysIleAspGlyPheGly-124

Antigenic Index - Jameson-Wolf

28-HisHisGlnGlyTyrLysSerAlaPheAlaLysGln-39
 41-AlaValIleGluLysMetLysSerArgAspLysAlaGln-52
 60-AsnTyrAlaArgGluLeuGluGlnAlaArgAlaGluAlaLysLysTyrGluValLysAla-79
 86-LeuAlaLysGlnAlaGluValSerArgLeuLysThrGluAsnLysLysGluIleGluAsn-106
 108-LeuThrGlnAspArgLysAsnAlaGlyGlyCysIleAspGlyPheGly-124
 135-LeuGlyTyrGlyAsn-139

Hydrophilic Regions - Hopp-Woods

41-AlaValIleGluLysMetLysSerArgAspLysAlaGln-52
 60-AsnTyrAlaArgGluLeuGluGlnAlaArgAlaGluAlaLysLysTyrGluValLysAla-79
 86-LeuAlaLysGlnAlaGluValSerArgLeuLysThrGluAsnLysLysGluIleGluAsn-106
 108-LeuThrGlnAspArgLysAsnAlaGly-116
a728

AMPHI Regions - AMPHI

11-SerPheAlaLeuValPheAla-18
 39-AlaThrGluValProLysAsnPro-46
 48-AlaPheValAlaLysLeuAlaArgLeuPheArgAsnAla-60
 76-AsnLeuAlaGlyThrValAspAsp-83
 198-GluAspValTyrGluHisCysLeuGlyCysTyrGlnMet-210
 218-TyrArgAspValAlaAsnAspGlu-225
 235-SerAsnArgIleAlaSer-240
 249-GlnAsnMetArgGluLeuMetProArg-257
 355-GluLysGluValArgArgTyrAlaGluAlaAlaArg-367

Antigenic Index - Jameson-Wolf

-596-

29-IleAsnProArgTrp-33
 35-LeuSerAspThrAlaThrGluValProLysAsnProAsn-47
 57-PheArgAsnAlaAspArgAla-63
 69-GluSerIleArgThrGluGluAsnLeuAlaGlyThrValAspAspGlyProLeuGlnSerGluLysAspTyr-
 92
 98-ArgLeuSerArgLeuLysGluLysAlaLys-107
 112-ThrGluGlnGluHisGlyLys-118
 125-HisIleGlyGluGlyGly-130
 136-LeuSerGlnArgSerProGluAlaPheVal-145
 149-TyrLeuTyrArgAsnAspArgProPheSer-158
 166-ValHisGlyGluAsnTyrGluThrThrGlyGluTyrArgVal-179
 182-GlnProGlyGlySerVal-187
 190-AlaAlaGlyArgGlyLysIleGlyGluAspValTyr-201
 217-LysTyrArgAspValAlaAsnAspGluGlnLysValTrpAspPheArgLysGluSerAsnArgIleAlaSer
 AspSerArgAsnSerValPheTyrGlnAsnMetArgGluLeuMetProArgGlyMetLysAlaAsnSer-263
 267-GlyTyrAspAlaAspGlyLeuProGlnLys-276
 280-SerPheAspAsnGlyLysLysArgGlnSerPheGluTyrTyrLeuLysAsnGlyAsn-298
 309-LeuLysAlaAspGlyValThr-315
 329-LeuAsnGlyGlyArgIleValArgGluGluLysGlnGlyAspArgLeuProAspPhe-347
 352-GluAsnLeuGluLysGluValArgArgTyrAlaGluAlaAlaArgArgSerGlyGlyArgArgAspLeu
 SerHis-377

Hydrophilic Regions - Hopp-Woods

38-ThrAlaThrGluValProLysAsnPro-46
 57-PheArgAsnAlaAspArgAla-63
 69-GluSerIleArgThrGluGluAsnLeu-77
 80-ThrValAspAspGlyProLeuGlnSerGluLysAspTyr-92
 98-ArgLeuSerArgLeuLysGluLysAlaLys-107
 112-ThrGluGlnGluHisGlyLys-118
 136-LeuSerGlnArgSerProGlu-142
 151-TyrArgAsnAspArgProPhe-157
 169-GluAsnTyrGluThrThrGlyGluTyr-177
 190-AlaAlaGlyArgGlyLysIleGlyGluAspValTyr-201
 217-LysTyrArgAspValAlaAsnAspGluGlnLysValTrpAspPheArgLysGluSerAsnArgIleAlaSer
 AspSerArgAsn-244
 250-AsnMetArgGluLeuMetProArgGlyMetLys-260
 268-TyrAspAlaAspGlyLeuPro-274
 282-AspAsnGlyLysLysArgGlnSer-289
 309-LeuLysAlaAspGlyValThr-315
 331-GlyGlyArgIleValArgGluGluLysGlnGlyAspArgLeuPro-345
 352-GluAsnLeuGluLysGluValArgArgTyrAlaGluAlaAlaArgArgSerGlyGlyArgArgAspLeu
 SerHis-377

a729

AMPHI Regions - AMPHI

21-CysThrMetIleProGlnTyr-27
 33-GluValAlaGluThrPheLysAsnAspThr-42
 55-HisAspTyrPheAla-59
 61-ProArgLeuGlnLysLeuIleAspIle-69
 149-GlnGlyIlePheAla-153
 164-SerLeuIleAlaThrValAlaLys-171
 242-LeuAlaThrLeuIleAsn-247
 268-LysLeuProAlaGlyLeu-273
 322-LeuGlyGlyLeuPheLysSer-328
 371-ValGlnSerAlaPheGlnAspValAlaAsnAla-381
 388-LeuAspLysAlaTyrAspAlaLeuSerLysGlnSerArg-400

-597-

419-GlyAlaLeuAspLeuLeuAspAla-426

442-LeuThrArgAlaGluAsnLeuAlaAspLeuTyrLysAlaLeuGlyGlyGlyLeuLys-460

Antigenic Index - Jameson-Wolf

25-ProGlnTyrGluGlnProLysValGluVal-34

36-GluThrPheLysAsnAspThrAlaAspSerGlyIleArgAlaValAsp-51

53-GlyTrpHisAspTyrPheAlaAspProArgLeuGlnLys-65

70-AlaLeuGluArgAsnThrSerLeuArgThr-79

85-GluIleTyrArgLysGlnTyrMetIleGluArgAsnAsnLeuLeuPro-100

105-AsnAlaAsnAspSerArgGlnGlySerLeuSerGlyGlyAsnValSerSerTyrLysVal-125

138-GlyArgValArgSerSerGluAlaAla-147

155-ThrAlaAsnArgAspAlaAla-161

173-TyrPheAsnGluArgTyrAlaGluGluAlaMet-183

188-ArgValLeuLysThrArgGluGluThrTyrLysLeuSerGluLeuArgTyr-204

215-ArgGlnGlnGluAlaLeuIleGluSerAlaLysAlaAspTyr-228

232-AlaArgSerGluGlnAlaArgAsn-240

248-GlnProIleProAspAspLeuProAla-256

277-ValLeuLeuAspArgProAspIleArgAlaAlaGluHisAlaLeuLysGlnAlaAsnAla-295

310-ArgLeuThrGlySerValAspThrHisSerAlaGlu-321

325-LeuPheLysSerGlyThr-330

347-GlyThrAsnLysAlaAsnLeuAspValAlaLysLeuArgGlnGln-361

383-ThrAlaArgGluGlnLeuAspLysAlaTyrAspAlaLeuSerLysGlnSerArgAlaSerLysGluAlaLeu

Arg-407

411-LeuArgTyrLysHisGlyValSer-418

424-LeuAspAlaGluArgSerSerTyrSerAla-433

442-LeuThrArgAlaGluAsnLeu-448

455-LeuGlyGlyGlyLeuLysArgAspThrGlnThrAspLys-467

Hydrophilic Regions - Hopp-Woods

28-GluGlnProLysValGluVal-34

36-GluThrPheLysAsnAspThrAlaAspSerGlyIleArgAlaVal-50

61-ProArgLeuGlnLys-65

70-AlaLeuGluArgAsnThrSerLeu-77

91-TyrMetIleGluArgAsnAsn-97

105-AsnAlaAsnAspSerArgGlnGlySer-113

138-GlyArgValArgSerSerGluAlaAla-147

156-AlaAsnArgAspAlaAla-161

177-ArgTyrAlaGluGluAlaMet-183

188-ArgValLeuLysThrArgGluGluThrTyrLysLeuSerGluLeuArgTyr-204

215-ArgGlnGlnGluAlaLeuIleGluSerAlaLysAlaAspTyr-228

232-AlaArgSerArgGluGlnAlaArgAsn-240

250-IleProAspAspLeuPro-255

277-ValLeuLeuAspArgProAspIleArgAlaAlaGluHisAlaLeuLysGlnAlaAsn-295

315-ValAspThrHisSerAlaGlu-321

350-LysAlaAsnLeuAspValAlaLysLeuArgGln-360

383-ThrAlaArgGluGlnLeuAspLysAlaTyrAspAlaLeuSerLysGlnSerArgAlaSerLysGluAlaLeu

Arg-407

424-LeuAspAlaGluArgSerSerTyrSerAla-433

442-LeuThrArgAlaGluAsnLeu-448

458-GlyLeuLysArgAspThrGlnThrAspLys-467

a730

AMPHI Regions - AMPHI

6-ArgLeuIleLysLeuLeuAlaAlaCys-14

26-LeuAlaAlaAspLeu-30

67-GlnIleAsnValIleGlnAspTyrThrHisArg-77

-598-

111-AsnHisAlaAlaAsp-115
 141-HisProAlaAspAlaTyrAspGlyProLysGlyAsnTyrProLysProThr-158
 187-GlnArgIleSerAspAsnTyrSerAsnLeuGlySerAsnPheSerAspArgAlaAspGlu-206
 214-HisAsnAlaLysLeu-218
 220-ArgTrpGlyAsnSerMetGluPheIleAsnGlyValAla-232
 234-GlyAlaLeuAsnProPheIleSer-241
 262-AlaAlaMetArgAsnIleAla-268
 277-AlaValIleGlyGlyLeuGlySerValAlaGlyPheGluLysAsnThrArgGluAlaValAspArgTrpIle
 GlnGlu-302
 305-AsnAlaAlaGluThrValGluAlaLeuValAsnValLeuProPheAlaLysValLysAsnLeuThrLysAla
 AlaLysPro-331
 347-ArgThrThrArgLysValThr-353
 355-GluThrGluGlyLeuAsnArgIleArgGln-364
 384-IleAsnValLeuSerGlyAsnSerIleGlnHis-394
 426-ThrHisGluIleSerAspIleValThr-434
 475-GluProAlaThrGlyLysValValThrAlaPheProAsp-487

Antigenic Index - Jameson-Wolf

2-LysProLeuArgArgLeuIle-8
 35-PheIleThrAspAsnAlaGlnArgGlnHisTyrGluProGlyGlyLys-50
 55-GlyAspProArgGlySerValSerAspArgThrGlyGlnIle-68
 74-TyrThrHisArgMetGly-79
 97-ArgPheSerGlyHisGlyTyrGluGluHisAlaProPheAsp-110
 112-HisAlaIleAspSerAlaSerGluGluLysGlyAsnValAspGluGlyPhe-128
 133-LeuAsnTrpGluGlyHisGluHisHisProAlaAspAlaTyrAspGlyProLysGlyAsnTyrProLys
 ProThrGlyAlaArgAspGluTyrThrTyrHisVal-168
 170-GlyThrAlaArgSerIleLysLeuAsnProThrAspThrArgSerIleArgGlnArgIleSerAspAsnTyr
 SerAsn-195
 197-GlySerAsnPheSerAspArgAlaAspGluAlaAsnArgLysMetPheGluHisAsnAlaLysLeuAspArg
 TrpGlyAsnSer-224
 257-TyrAlaIleAspLysAlaAlaMet-264
 271-ProAlaGluGlyLys-275
 287-GlyPheGluLysAsnThrArgGluAlaValAsp-297
 299-TrpIleGlnAsnProAsnAlaAlaGluThrValGlu-311
 323-LysAsnLeuThrLysAlaAlaLysProGlyLysAlaAlaValSerGlyAspPhe-340
 344-TyrAsnThrArgThrThrArgLysValThrThrGluThrGluGlyLeuAsnArgIleArgGlnAsnGlnLys
 AsnSerAsnIleHisGluLysAsnTyrGlyArgAspAsnProAsnHisIle-384
 397-TyrGlyAspAlaGluGlyGly-404
 407-PheProGlyLysProGlyLysThrThrPhePro-417
 419-HisTrpSerAlaSerLysIleThrHisGluIleSerAsp-431
 433-ValThrSerProLysThrGln-439
 450-TyriIleAlaLysGlyArgProAlaArg-458
 461-SerTyrGluThrArgAspGlyIleArgIle-470
 472-ThrValTyrGluProAlaThrGlyLys-480
 485-PheProAspArgThrSerAsnProLysTyrAsnProValLys-498

Hydrophilic Regions - Hopp-Woods

2-LysProLeuArgArgLeuIle-8
 39-AsnAlaGlnArgGlnHisTyrGluProGlyGly-49
 55-GlyAspProArgGlySerValSerAspArgThrGly-66
 102-GlyTyrGluGluHisAlaPro-108
 112-HisAlaAlaAspSerAlaSerGluGluLysGlyAsnValAspGluGly-127
 135-TrpGluGlyHisGluHisHisPro-142
 144-AspAlaTyrAspGlyProLysGlyAsnTyrProLys-156
 158-ThrGlyAlaArgAspGluTyr-164

-599-

170-GlyThrAlaArgSerIleLys-176
 178-AsnProThrAspThrArgSerIleArgGlnArgIleSerAsp-191
 200-PheSerAspArgAlaAspGluAlaAsnArgLysMetPheGluHisAsnAlaLysLeuAspArgTrpGlyAsn-223
 257-TyrIleAspIysAlaAlaMet-264
 271-ProAlaGluGlyLys-275
 287-GlyPheGluLysAsnThrArgGluAlaValAsp-297
 303-AsnProAsnAlaAlaGluThrValGlu-311
 323-LysAsnLeuThrIlysAlaAlaLysProGlyLysAlaAlaVal-336
 347-ArgThrThrArgLysValThrGluThrGluGlyLeuAsnArgIleArgGlnAsnGlnLysAsnSerAsnIleHisGluLysAsnTyrGlyArgAspAsnProAsn-382
 399-AspGluAlaGly-403
 424-LysIleThrHisGluIleSerAsp-431
 450-TyrIleAlaIlysGlyArgProAlaArg-458
 463-GluThrArgAspGlyIleArgIle-470
 485-PheProAspArgThrSerAsnProLys-493
 a731
AMPHI Regions - AMPHI
 17-AlaCysAlaValPro-21

Antigenic Index - Jameson-Wolf
 22-GluAlaTyrAspAspGlyGlyArgGlyHis-31
 34-ProValGlnAsnGlnAlaGlyThrAlaAsp-43
 45-ArgAlaPheSerCysGluAsnGly-52
 56-HisValArgArgLeuAspGlyGlyArgIleAlaLeuArgLeuAspGlyArgArgAlaValLeuSerSerAspValAlaAlaSerGlyGluArgTyrThrAla-89
 92-GlyLeuPheGlyAsnGlyThrGluTrpHisGlnLysGlyGlyGluAla-107
 113-AspAlaTyrGlyAsnSerValGluThrSerCysArgAlaArg-126

Hydrophilic Regions - Hopp-Woods
 22-GluAlaTyrAspAspGlyGlyArgGlyHis-31
 56-HisValArgArgLeuAspGlyGlyArgIleAlaLeuArgLeuAspGlyArgArgAlaValLeu-76
 80-ValAlaAlaSerGlyGluArgTyrThrAla-89
 100-TrpHisGlnLysGlyGlyGlu-106
 119-ValGluThrSerCysArgAlaArg-126
 a732

AMPHI Regions - AMPHI
 14-LeuGlyAlaIleSer-18
 43-ValGlnSerIleArgThrMetAlaGluValTyrGly-54
 66-AspAlaAspLeuPheGluGlyAlaMetLysGlyMetVal-78
 95-GluIleLysGluSerThrSerGly-102
 115-AspGlyPheValLysValValSerProIleGluAsp-126
 155-GluAlaValLysLysMet-160
 183-ValAsnLeuThrArg-187
 214-GluArgThrValGluSerValAsnThrAlaAlaLys-225
 283-LysAlaValProGluAspTyrValTyr-291
 297-SerLeuAlaGlyIleProAlaGluLeu-305
 322-SerGluIleValAlaGly-327
 400-LeuValGlyHisIleGlyAsn-406
 446-ArgArgIleProAsnProAlaLysAsp-454
 459-LysAlaLeuAspLeuValLysSerProGluGlnTrpGlnLysSerLeu-474

Antigenic Index - Jameson-Wolf
 30-AlaAlaGluLysAspArgArgAspAsnGluVal-40
 59-AsnTyrTyrGlnAspLysProAspAlaAspLeuPhe-70